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ORIGINAL COMMUNICATIONS.

ARTICLE I.

TREATMENT OF CROUP.

By F. E. WAXHAM, M. D., *Professor of Diseases of Children, College of Physicians and Surgeons, of Chicago.*

(Read before the Chicago Medical Society, April 20, 1885.)

In the treatment of pseudo-membranous laryngitis a host of specifics have been proposed from time to time. The fatality of the disease is so great that it is not strange that so many different remedies have been advocated. Some place their faith in emetics, others in veratrum viride, others in mercury, still others in various inhalations, and so on until almost the whole catalogue of remedies has been exhausted. It is undoubtedly true that we possess no single remedy that can be depended upon with which to successfully treat this disease, even in a small proportion of cases. Neither will any one line of treatment be appropriate in every case. In many cases the danger is from asthenia. If we can only keep up the strength, the child will struggle through. In these cases, iron, quinine,

nourishment and stimulants, are our most important agents. In other cases the great danger is from suffocation, and no amount of strength would be of avail, unless we can clear the larynx of the false membranes, or make an artificial opening through which respiration may be conducted.

In other cases we are not called until the child is upon the verge of suffocation, and tracheotomy, or intubation of the larynx, is our only resort.

In other cases, again, we are called early, and oftentimes witness the slow, unrelenting progress of the disease in spite of our most earnest efforts to arrest it.

Not only should the treatment vary in different cases, but in the different stages of the same case. We shall be much more successful in the treatment of this disease if we meet the various indications as they arise, than if we depend upon any single remedy. Among the most important indications we may enumerate the following:

- 1st. Prevent as far as possible the formation of false membrane.
  - Cold applications,
  - Blister,
  - Quinine,
  - Digitalis,
  - Aconite,
  - Veratrum,
  - Emetic,
  - Purgative.
- 2d. When formed cause its dissolution and expulsion as quickly as possible.
  - Spray.
    - Pancreatin,
    - Lime water,
    - Liq. potassæ,
    - Lactic acid,
    - Phosphoric acid.
  - Bichloride of mercury,
  - Lactate of iron,
  - Emetics.
- 3d. Control laryngeal spasm.
  - Opium,
  - Bromide of ammonium.
- 4th. Prevent complications
  - Uniform temperature.
- 5th. Support the strength of patient
  - Nourishment,
  - Stimulants.
- 6th. In case of threatened suffocation, tube the larynx or perform tracheotomy.

Among the agents for meeting the first indication, the prevention of the plastic exudation, the greatest confidence has

been placed in cold applications, blisters, an emetic or purgative and quinine, digitalis, aconite or veratrum.

As the disease is generally conceded to be a local inflammation, and the membrane an exudation resulting therefrom, it is certainly clear that so far as we are successful in controlling the local inflammation, so far will we be successful in limiting its product, the exudate. Hence the benefit from cold applications, as advised by Professor Peaslee, and the use of the blister, in which Professor Earle, of this city, has much confidence; the use of veratrum viride and emetics, as advised by Professor Fordyce Barker, or in its place digitalis, or aconite if there is danger from asthenia; for the same reason, large and frequent doses of quinine are indicated.

To meet the second indication, to cause the dissolution and expulsion of the false membrane, we must resort to solvents and emetics. From various experiments with different solvents I am satisfied that trypsin is the quickest and most satisfactory. Next in order, lime water, then liquor potassæ, and then ten per cent. solution of lactic and dilute phosphoric acids. These solvents should be used in the form of spray from an atomizer.

Dr. Henry Dwight Chapin, in a very able article published in the *Medical Record*, March 7, 1885, advocates the use of trypsin, and gives the following formula:

℞

Fairchild's Ext. Pancreatis..... .....gr. xv.
Sodii Bicarb.....gr. iij.
Glycerin ....ʒj.
Aq. Dest.....ʒvij.
M.

My experiments confirm entirely the value of this combination. I prefer, however, using equal parts of glycerine and water as the menstruum.

A very important consideration referred to by Dr. Chapin is the proper form of atomizer. As used in the ordinary hand atomizer these solutions are of little benefit, as it is a question as to how much of the solution reaches the larynx. The atomizer, as recommended by Dr. Chapin, should terminate in a rounded nozzle, that should be directed downward at a right angle to the stem of the atomizer. This can be thrust far backwards in the mouth without fear of injury, and the spray thus directed into the larynx. These solutions, to be of benefit, must be used frequently, at least every half hour.

In regard to lime water, it is easily proven to be one of our quickest solvents of false membrane. Time and again I have seen false membrane dissolved in an officinal solution of lime water, in from seven to twenty minutes. While lime water is second only to trypsin in its solvent power, yet the vapor of lime, in whatever form, is useless as a solvent. At one time I was somewhat enthusiastic over the inhalation of the vapor of lime in the treatment of croup, and exhausted considerable time and ingenuity in perfecting suitable apparatus for its convenient administration. Finally, after several cases terminated fatally, although they were nearly smothered with it, I became skeptical, and am now fully convinced that it possesses no solvent power. Whatever benefit is to be derived from it is due simply to the warmth and moisture.

A two per cent. solution of liquor potassæ, and ten per cent. solutions of lactic and phosphoric acids, are less active solvents than either officinal lime water or trypsin.

Of the internal remedies for promoting disintegration and separation of the false membrane, perhaps those that have received the highest sanction are lactate of iron and bichloride of mercury. I have never used the lactate of iron being discouraged by the slow digestive action of lactic acid. The

bichloride of mercury I have used thoroughly in five cases' both before and after tracheotomy, only one case terminating favorably. In this case the favorable termination was ascribed to other treatment as well. For causing the rejection of the false membrane almost every emetic has been employed and advocated. I am satisfied that alum, or alum combined with ipecac, is as good as any.

The third indication, the relief of the laryngeal spasm, is best met by the use of opium or bromide of ammonium. Opium serves a double purpose, as it relieves pain as well as spasm.

The patient should be supported by the most nourishing diet, and by stimulants if necessary.

Complications will be avoided in a great measure by keeping the room at a uniform temperature. In case of threatened suffocation it is our plain duty either to perform tracheotomy or tube the larynx.

A desperate case of croup has just come under my observation in a child four years old, and a brief history may not be uninteresting.

The disease commenced in the form of nasal diphtheria, with considerable inflammation and swelling of the tonsils. There was a profuse muco-purulent discharge from the nostrils, and the breathing nasal in character. After one week a slight, thin membranous exudation appeared upon the tonsils, and the next day a croupy cough occurred. Respiration became gradually embarrassed, the dyspnœa increased and became urgent, and the respiration characteristic of pseudo-membranous laryngitis. The cough gradually became more and more husky, and the voice whispering. The pulse ranged at about 120 to 130; temperature, 101° F.

Treatment.—Quinine, gr. 1¼, every 2 hours, alternating with gtt. ij. tr. chloride of iron, combined with chloride of pot-

ash, glycerine and simple syrup, vapor of lime from a kettle over an oil stove constantly, and the following mixture by means of the hand atomizer:

℞

Fairchild's Ext. Pancreatis.....gr. xxx.
Sodii Bicarb..... gr. vj.
Glycerin ....
Aq. Dest..... aa. ℥j
M.

A large blister was also applied over the region of the larynx. On the third day after the occurrence of the croupy cough, the respiration being difficult, the voice and cough suppressed, the iron mixture was omitted, and $\frac{1}{24}$ gr. of bichloride of mercury given every hour. Quinine and other treatment continued. Warm poultices covered with oil silk were also applied to the chest.

Within forty-eight hours after the administration of the mercury a number of large masses of false membrane were rejected, measuring from 1½ to 2 inches in length by ½ inch in width, with immediate relief to the urgent dyspnœa.

False membrane was occasionally rejected in small masses for the next two or three days.

On the third day after the first rejection of false membrane, the temperature was suddenly elevated to 104° F., respiration, 20; pulse, 160, and very feeble.

The child was greatly prostrated and covered with a fine rash closely resembling the eruption of scarlet fever, causing the child much annoyance from the intense itching. The cough, short and painful. Physical examination revealed a broncho-pneumonia. The bichloride of mercury, which had been given less frequently after the expulsion of the false membrane, was now discontinued, but the quinine was continued,

alternating with tr. digitalis, combined with carbonate of ammonium and syr. of squills, giving each every four hours.

The cough within a day or two became loose and less painful, and the sputa characteristic of pneumonia. There was no recurrence of the membrane within the larynx, the respiration continuing unembarrassed, but the voice remained weak, and more or less whispering, for several days. The child made a good but gradual recovery.

In this case several masses of false membrane were rejected at different times. Four pieces, each measuring one and a half inches in length by one-half inch in width, were subjected to the following experiments:

1st. One of these masses of membrane was pinned to a board ten inches from the spout of a kettle containing a turbid solution of lime water, and heated by an oil stove. For three hours a constant stream of steam was poured forth upon this membrane without any perceptible effect.

The membrane was not softened or disintegrated in the least.

2d. The membrane that had been subjected to the steaming process without any seeming effect was placed in a two ounce vial containing an officinal solution of lime water. In seven minutes it was entirely and completely dissolved.

3d. Another mass of membrane was attached to a cork, and subjected every half hour to a spray from a hand atomizer, of the following solution:

℞

Fairchild's Ext. Pancreatis.....gr. xv.
Sodii Bicarb .....gr. iij.
Glycerin .....ʒss.
Aquæ .....ad. ʒj.
M.

In one hour and a half, and after four applications of the spray, the membrane was entirely disintegrated.

4th. Another mass of equal size was subjected in the same manner, to a spray of officinal lime water. In two hours and a half, and after six applications of the spray, the membrane was completely dissolved.

5th. Still another mass of membrane of the same size and apparent consistency, was subjected under exactly the same circumstances to a spray of a ten per cent. solution of lactic acid. In three hours and a half the membrane was somewhat softened, but not disintegrated and completely softened as in the previous cases.

The conclusions to be deduced are:

1st. A solution of pancreatin, with soda and glycerine, is the quickest and most satisfactory solvent.

2d. Lime water in the form of spray is a rapid solvent of false membranes, but does not act as quickly as a solution of pancreatin.

3d. The vapor of lime, however thoroughly applied, is entirely useless as a solvent.

4th. Lactic acid is not a satisfactory solvent.

If I may be permitted to still further encroach upon your time and patience, I would refer briefly to tubing of the larynx.

I am convinced that the profession in Chicago, while they sanction tracheotomy, are not enthusiastic over it, and that they will gladly accept any substitute and give it a fair trial. Such a substitute has been proposed in the tubing of the larynx. To Dr. O'Dwyer, of New York City, belongs the great credit of originating this bold and ingenious method of treating croup. While the larnyx has been tubed, from time to time, for laryngeal obstructions, yet none were bold enough to use tubes of sufficient length to drop into the trachea and to leave them in

situ. Although occasionally performed, the method was entirely different from that advocated and practiced by Dr. O'Dwyer. To Dr. O'Dwyer belongs the entire credit of tubing the larynx, as will be illustrated to-night.

We can see no objection that can be raised to this method of treating croup that does not apply to tracheotomy as well. True, the false membrane may extend below the tube and cause obstruction in the trachea, but this is just as likely, or even more likely, to occur after a tracheotomy.

The advantages of intubation are:

1st. That with a little dexterity and practice it can be very easily and quickly performed and without danger.

2nd. We have no mutilation or disfigurement of the patient.

3rd. We have no wound that may be the cause of shock or that may be the source of systemic infection.

4th. The laryngeal tube can be worn much more easily, with less irritation, than the canula after a tracheotomy. Coughing and expectoration occur just as easily.

5th. It does not require the close and unremitting care of the medical attendant, as does a tube after tracheotomy.

6th. The air that reaches the lungs is warm from its contact with the upper air passages, and not as likely to cause bronchitis or pneumonia.

7th. Much less objection will be raised by parents against tubing.

As these instruments have been but recently obtained, my experience is limited to a single case, which may not be uninteresting.

On Sunday last, April 19th, I was called to attend a little child two years and one month old, suffering from true croup. The child had been sick for two or three days, and respiration had been very difficult during the whole of the previous night.

Upon examination, false membrane was observed upon both tonsils, which were considerably swollen and inflamed. The cough was husky and frequent, and the voice whispering. The pulse very rapid and feeble. The respiration was labored, there being great difficulty in expiration as well as inspiration. The face deeply flushed and covered with perspiration, while with every inspiration there was depression of the soft tissues at the base of the sternum and underneath the clavicles.

An emetic was administered and considerable ropy mucus expelled, but with little relief to the urgent dyspnœa.

At 1 P. M., Sunday afternoon, the child was in a comatose condition, the head thrown far backward, the features of a deadly pallor, the pulse feeble and rapid, and the respiration difficult in the extreme. The child was in the last stages of suffocation. In this condition the larynx was tubed without difficulty and without resistance, and with immediate relief to the urgent symptoms. The breathing at once became easy and tranquil, the natural color returned to the lips and face, and the child soon fell into a quiet sleep.

At 5 P. M. the patient was seen by Dr. Steele as well as myself. Respiration, 25 per minute; pulse, 120, and of good strength; temperature, 103.8° F. The little patient seemed bright, and interested in what was going on around him. He ate half a cup of soft bread moistened with milk, eagerly, and then teased for candy. Water and milk whenever given provoked coughing, but soft bread could be easily swallowed. The patient was given four grains of quinine every two hours, per rectum, and frequently bathed with cool water.

9 P. M. Respiration, 48; pulse, 125; temperature, 103° F. The patient bright and inclined to be playful.

1:30 A. M. Tube rejected after remaining in position twelve hours. The child was seen one hour later, when the symp-

toms being again urgent, the tube was replaced with immediate relief. Pulse, 130; respiration, 32; temperature, 101½° F.

April 20th, 9 A. M. Pulse, 130; temperature, 101°F.; respiration, 44. The respiration now indicated extension of false membrane downward. It was becoming more labored and rasping in character.

1 P. M. Respiration very much embarrassed and the child becoming very restless and livid in color. The tube was now removed, and as respiration was as difficult with as without it, its further use was abandoned. The child died at 7 P. M., thirty hours after intubation.

We cannot judge of the value of any operation from a single case. We must withhold our judgment until a considerable number of cases have been recorded, and only until then can we determine the value of intubation of the larynx. We certainly should feel very hopeful that it will soon be considered a legitimate operation.

3449 Indiana Avenue.

ARTICLE II.

PEROXIDE OF HYDROGEN AS A MEDICINAL AGENT.

By BOERNE BETTMAN, M. D., *of Chicago.*

(Read before the Chicago Society of Ophthalmology and Otology, December, 1884.)

During the last decade great advances have been made in aural therapeutics. The old remedies heretofore employed have in a great measure been substituted by others, whose introduction was actuated by the revolutionary antiseptic measures pervading all branches of medicine. Aurists were not behind hand in applying the principles expounded by Lister. Carbolic acid found its way into the recesses of the aural cavity

to the detriment of the mighty horde of bacilli. The alarm had been sounded, and the watchword, let no guilty one escape, was proclaimed over the land.

The first step towards reform, towards rational medication, had been instituted, forming an epoch in the history of otology. It was soon discovered that carbolic acid, although in very many cases highly efficient in checking purulent discharges, could not be employed as a germicide; a solution possessing such properties (15%) being too strong, and not tolerated by the sensitive mucous membrane.

The boracic acid treatment proposed by Bazold, therefore, immediately found many advocates. So pronounced and rapid are the effects of this method, and so numerous the good results it has effected, that we are almost willing to promise a cure in every case of *Otitis Media Purulenta*. The bichloride of mercury has also sustained well the severe test to which it has been subjected, and may be classified among the list of remedies with which happy results may be obtained in purulent discharges from the ear. Iodoform also belongs to this category.

I desire this evening to call your attention to another equally efficient remedy, which, in my hands, has proved of the greatest value in the treatment of diseases of the ear, characterized by a purulent or muco-purulent discharge. Peroxide of hydrogen, discovered by Thenard in 1818, for many years known only to the professional chemist, was introduced into medical literature by Dr. B. W. Richardson, 1855. It was for a time extensively used, then fell into oblivion, and only lately reclaimed to the medical world by the unceasing labors of Dr. Coffin, and especially Dr. W. A. Harlan, of this city.

It has been principally employed by dentists for the treatment of alveolar abscesses. With the exception of two cases,

reported by Dr. Prince, and those recorded by Dr. LeRoy Walker, I have found no mention of it in American aural or ophthalmic literature. It has been employed in the clinics of DeWecker, Landolt and other Parisian oculists. It is a highly prized antiseptic, and as such of inestimable value as a local agent.

The usual method of preparing the pure peroxide of hydrogen* is by decomposing peroxide of barium with hydrochloric acid. The chemical reaction is represented by the following equation: $Ba\,O_2 + 2\,H\,Cl = H_2\,O_2 + Ba\,Cl_2$. The chloride of barium is removed from the solution by the addition of sulphate of silver, which precipitates the barium as sulphate of baryta, and the silver as chloride of silver, thus:

$Ba\,Cl_2 + Ag_2\,O\,SO_3 = 2\,Ag\,Cl + Ba\,O\,SO_3$. The precipitates are allowed to subside, and the clear liquid evaporated in the exhausted receiver of the air-pump over a dish of oil of vitriol to absorb the water, which evaporates much more rapidly than the peroxide.

In its pure state it is a colorless sirupy liquid of a slightly bitter taste, and possesses a faint odor of chlorine. Its sp. gr. is 1.455. It is a highly unstable compound, decomposing rapidly when exposed to air and liberating its oxygen. By virtue of this property it owes its value as a therapeutic agent. The dilute substance, as sold for medicinal purposes, is more stable, and may be heated to a high temperature without losing any of its properties.

*The following table prepared by M. Miquel, of the Observatoire de Montsouris, shows the comparative value of the various antiseptics. The minimum quantity of the compound is given which will prevent the formation of germs in 1000 c. c. of beef tea:

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*Bloxam's Chemistry, Inorganic and Organic. Page 84.

*(Bied. Centr.) Weekly Medical Review. Vol. xl., No. 1.

	Grms.
Mercurous iodide	0.025
Silver iodide	0.03
Hydrogen peroxide	0.05
Mercuric chloride	0.07
Silver nitrate	0.08
Osmic acid	0.15
Chromic acid	0.20
Iodine	0.25
Chlorine (gaseous)	0.25
Hydrocyanic acid	0.40
Bromine	0.60
Chloroform	0.80
Copper sulphate	0.90
Salicylic acid	1.00
Benzoic acid	1.10
Potas. chromate	1.30
Picric acid	1.30
Lead chloride	2.10
Mineral acids	2.00–3.00
Essence bitter almonds	3.20
Phenol	3.20
Potas. permanganate	3.50
Aniline	4.00
Alum	4.50
Tannin	4.80
Arsenious acid	6.00
Boracic acid	7.50
Chloral hydrate	9.00
Ferrous sulphate	11.00
Amyl alcohol	14.00
Ethyl sulphide	22.00
Borax	70.00
Ethyl alcohol	95.00
Potas. thiocyanate	120.00
Potas. iodide	140.00
Potas. cyanide	185.00
Sodium thiosulphate	275.00

I have made quite a number of observations with the microscope regarding the action of peroxide of hydrogen upon pus. If several drops of pus taken from a discharging ear be placed upon a slide and a drop of dioxide of hydrogen be allowed to flow under the covering glass the following phenomena will be noticed:

The pus corpuscles and bacteria are put into lively motion, small bubbles of gas, the liberated nascent oxygen, are now evolved. The pus corpuscles gradually lose their spherical form, shrink, usually assuming a crescentic form, and are heaped up a mass of detritus. The bacilli are affected in a similar manner. In a few seconds the active bodies are transformed into a dead mass, intermixed with the decomposed pus corpuscles and surrounded by seething bubbles of gas.

Whether the bacteria are totally destroyed never to be resuscitated can only be determined by a series of experiments, (attempts at cultivation) which I reserve for some future occasion; although pure oxygen is known to kill bacteria outright, which in all probability will be verified by the experiments just alluded to.

Its therapeutical action in treatment of alveolar abscess has been explained by Harlan, as follows:

*"When the peroxide of hydrogen comes into contact with pus the extra O it contains is liberated so rapidly that the hydrogen and sulphur of the tissues immediately combine, resulting in H_2SO_4, or sulphuric acid in small quantity, sufficient to glaze the surface of the pus producing area, thus affording an opportunity for the exuding protoplasmic material to organize into new tissue. The remaining unsatisfied atoms of O quickly distend the pus sac and force the contents through the root or fistulous opening."

I have employed the remedy during the last six months in more than thirty cases of *Otitis Media Purulenta.* In every instance, my most sanguine expectations have been realized. The preparation employed is that sold only by chemists, containing twelve volumes of gas. I first thoroughly cleanse the ear with warm water, dry the organ by repeated introductions of

*Transactions of the American Dental Association, 1884, page 40.

absorbent cotton and then instil 8 to 12 drops of the oxygenated water. Contact with the pus and diseased tissues sets free the oxygen, visible as gas bubbles, which united with the expelled pus forms a seething, frothy mass, forcing its way outwards from its narrow confines. This decomposition goes on for several minutes. The patients rarely if ever complain of pain. They invariably speak of a boiling or effervescence in the ear accompanied by a sensation of heat, following immediately upon the introduction of the remedy. After cleaning the parts, the mucous membrane of the middle ear is seen to have assumed a very faint milky-white appearance. Repeated instillations are accompanied by less effervescence, until at last it remains in the ear as a perfectly clear liquid, no longer cognizable by the patient by the evolution of gas. I have also been informed by many individuals, that as the discharge decreased, the burning sensations produced by the remedy increased in severity. The strength of the remedy may be weakened by the addition of water.

The liberated gas enters the most hidden and remote recesses of the middle ear, forcibly dislodging the decomposing material and destroying bacteria embedded in the tissue meshes. If the perforation of the *Membrana Tympani* is small, the dioxide can be injected directly into the middle ear.

I have also employed this remedy successfully in cases of chronic dacryocystitis, and in one case of trachoma which had run its course, but where there still existed a mucid discharge. I cannot do better than relate the clinical history of one of these cases to demonstrate the curative effects of the medicine.

Miss Y. sought my advice for a chronic dacryocystitis. There was an extensive swelling of the sac, which had existed for several years. On pressure, a large quantity of muco-purulent matter was expelled into the conjunctival sac.

Introduction of a Bowman's probe revealed the presence of a tight stricture, which was forced under the influence of ether. The usual routine medication, with astringents, carbolic acid, introduction of gelatine bougies and probes, ameliorated the difficulty; but although continued for a period of six months, was not able to completely check the discharge. I therefore determined to try the peroxide of hydrogen. The very first injection was followed by a decided improvement; the discharge ceased entirely on the third application. Continued introduction of the dioxide was not accompanied by effervescence, proving conclusively the absence of inflammatory products. Contact of this medical agent with the eye produces a sharp, stinging pain, which is rapidly relieved by applications of cold water. I have thus far obtained perfect cures in four cases of dacryocystitis of long standing.

Another case still under treatment has been greatly improved and will soon be dismissed.

The preparation of peroxide of hydrogen employed in the above cases was obtained from Mr. Sargent, 125 State street. It was marked chemically pure, and proved to be so, testing it with blue litmus paper. The finer chemical tests might reveal the presence of a trace of free acid, but of so minute a quantity as to form no factor in the action of the remedy.

113 Adams St.

ARTICLE III.

TREATMENT OF ECZEMA. *By* HENRY J. REYNOLDS, M. D., *Professor of Dermatology in the College of Physicians and Surgeons, Chicago. Dermatologist to the West Side Free Dispensary, Chicago. Surgeon to the Department of Genito-Urinary Diseases, West Side Free Dispensary, Chicago.*

[Read before the Illinois State Medical Society, May 21, 1885.]

As this subject is a very broad one, and one, in order to treat which fully, would occupy too much time, my remarks will be directed more particularly to the principles necessarily involved in the same; an intelligent knowledge of which always suggests the particular remedy or form of treatment that will be applicable in each case as it is encountered. This fact will be the more fully realized when we remember that upwards of one hundred names have been made use of by the various authors to designate different forms of the disease. Brief reference will also be made to a few remedies which I have myself found to be useful in certain cases.

I shall assume, as experience has led me to believe, that while there may be constitutional predisposing causes for the disease, the direct or exciting cause is usually external; certain it is, however, that many forms may be produced by external irritation, and that all may be aggravated by it. A consideration of these facts suggests the idea that the treatment, to be effectual, must be, to a great extent, external or local in character; and again, as many cases tend to spontaneous recovery, when the part has been simply protected from external irritation, for example, the eczema intertrigo, or that produced by filth and chafing, that resulting from parasitic irritation, the application of poisonous substances to the skin, etc., the rational inference is, that the external treatment must be directed with

a view to removing all irritation of a local or external character.

In a disease which assumes so many different forms, no specific line of treatment or rule can be laid down that will be applicable to all cases; the remedies must be adapted to the particular existing conditions met with in each case. What would prove useful in one stage, in one form, in one locality or in one person, may be not only useless in another, but absolutely injurious. The secret of successful management in this disease, more than many others, perhaps, lies not so much in the possession of an unlimited knowledge of remedies as it does in the display of common sense and good judgment in the adaptation of remedies to conditions met with. The pathological condition being absolutely identical in no two cases, so the treatment must vary, and a knowledge of specified lines of treatment or certain combinations of drugs said to be useful, with a neglect of consideration of the principles upon which treatment should be based in each individual case, in this, as in all other diseases, is liable to mislead.

With these few ideas constantly in mind, with the confidence and coöperation of the patient, with the possession of good judgment and common sense, with even a limited amount of scientific knowledge, the physician is prepared to intelligently undertake the management of each case as it presents itself, no matter what its particular form or name may be, and in the majority of cases, under such circumstances, is warranted in guaranteeing a cure, though in a disease which, untreated, naturally tends to chronicity, it is of the utmost importance that in rendering a prognosis the physician secure for himself an abundance of time in which to complete the cure; the cooperation of the patient with regard to the length of time he is willing to persist in carrying out the prescribed treatment is as

essential to the ultimate success of the same as the remedies made use of. The physician is many times defeated in a cure, in chronic cases, solely by lack of persistence in the treatment on the part of the patient.

For the purpose of convenience I think all cases presented for treatment, regardless of the name, location, or cause, may be intelligently managed by dividing them into three classes: First, those the features of which are mainly of an *acute* character; second, those forms wherein the predominating features are *sub-acute* in type; and third, that class of cases that take on the indolent or *chronic* form. The treatment may then be arranged accordingly, always subject, however, to constant variation according to conditions warranting the same; for instance, the acute may very soon take on a sub-acute form; the sub-acute may approximate in character the acute or chronic, and the chronic may at any time, owing to circumstances perhaps not under the control of the physician, develop acute symptoms. Here, as before stated, the physician is called upon for common sense, good judgment, power of discrimination, etc., which are more essential elements in successful treatment than an unlimited knowledge of remedies.

It is necessary, first, then, before adopting any line of treatment, to determine what the predominating features are: whether they be acute, sub-acute, or chronic; which, to a naturally close observer, with even a limited amount of experience, is a matter of no great difficulty.

Acute.—When the disease assumes this character, as in all other acute inflammatory affections, the great principle necessarily involved in successful management, is *rest;* and this does not necessarily simply imply quietude of the organ or member but *rest from every irritating influence;* whether it be motion, friction, scratching, parasitic, or atmospheric irritation, too fre-

quent washing the dirt naturally incident to the calling of the individual, etc. To accomplish this, soothing and protecting measures are called for, among which may be mentioned equal parts of sweet almond, linseed or olive oil and lime-water. Various poultices answer as well or better in some instances, which, to be most soothing, require to be at least as warm as the temperature of the body. To either of these preparations a little laudanum may be added, if thought advisable, and to avoid too frequent exposure of the part in changing the poultice should be covered with oiled silk. With this poulticing, soothing treatment, the part will invariably pass rapidly into the sub-acute condition, when the treatment may vary accordingly.

Sub-acute.—In this class of cases, which may assume this form from the beginning, or may follow the acute, the part should first, if necessary, have oleaginous remedies applied three times a day for one or two days, for the purpose of loosening up dried crusts and scales. It should then be carefully washed with soap and warm water till well cleansed. I think, as we now find the condition, the various dusting powders answer the best purpose, and it is my almost universal custom, in both dispensary and private practice, to use impalpably fine boracic acid for this purpose. This powder seems to work particularly well if there be a tendency to pus formation, drying it up in a very few days invariably. Scratching, in this, as in all other forms, must be imperatively prohibited: no treatment will be effectual if the part be kept irritated by scratching, and the mildest sub-acute or chronic form can at once be aggravated into an acute condition thereby; besides, it not only fails to relieve the itching, but invariably aggravates it. A little camphor, finely pulverized and added to the boracic acid, sometimes has a tendency to relieve the itching. In my experience,

however, there is nothing will prove so effectual in relieving itching as *total abstinence from scratching*, and to this end it will frequently be found necessary to either muffle or tie the hands of infants and children. I have frequently had good results from the use of a mixture of equal parts of tinct. camphoræ tinct. myrrhæ and tinct. opii, which will be well tolerated unless there be too much abrasion. The part may be washed once a day or every second day with warm water and soap, which should, in this stage, be only mildly alkaline, some of the hard or soda soaps being the preferable form. It must be borne in mind, again, however, that the symptoms may now at any time assume either the acute or chronic form, and thereby necessitate a variation in the treatment accordingly.

Chronic.—In this form, which may be chronic from the commencement, or may result from the sub-acute, and in which the predominating features are frequently more the results of eczema, as infiltration, thickening, hypertrophy, etc., than true eczema itself, more active and stimulating measures are required. The soaps, which, in this stage, are used for their stimulating and anti-pruritic effect, dissolving and getting rid of pathological products, which create irritation, induce, prevent physiological action, etc., should be of the strongly alkaline or potash variety, and should be freely used. After thoroughly cleansing, I have frequently had good results from the local application of the ordinary soap liniment, the camphor therein contained acting as an anti-pruritic. The different tarry preparations are very useful, especially in the squamous varieties. In chronic eczema of the leg, with which is frequently associated ulceration and varicose veins—which is frequently chronic only, however, as regards duration, the actual symptoms being often acute—the bandage is always very useful. It, in addition to enforcing the principle of *rest*

from the mechanical irritation caused by the over-loaded veins and capillaries, induces, by its contact with the tissues, absorption of morbid products and allows the parts to regain their tone.

The two following cases, which were treated at the West Side Free Dispensary and made the subjects of clinical lectures by me at the College of Physicians and Surgeons, of Chicago, may be of some interest in this connection:

CASE I. Mr. C., aged seventy-two, came under my observation in October, 1873. The right leg, from knee down, eczematous and discharging pus freely. Ulcer, just above external malleolus, four inches in diameter, also smaller one just above internal malleolus. Leg enormously enlarged and verrucous from hypertrophy and about the same size from knee to instep. Varicose veins. Patient unable to get around without crutches. This condition had existed with varying severity for twenty years and was, in short, so bad that a diagnosis of elephantiasis had previously been made and amputation advised.

The whole leg, ulcer and all, was thoroughly washed with hot water and green soap every day.

When gently wiped dry, it was sprinkled with pure boracic acid, covered with loose cloths, and bandaged with cotton roller. Scratching strictly prohibited and saline laxative ordered to be taken before each meal. This constituted the entire treatment, except that later, when there was less exudation and maceration of the tissues, the rubber bandage was substitued for the cotton, and still later an elastic stocking was worn.

Improvement commenced immediately and continued till ulcers were all healed and hypertrophy almost entirely gone. In six months' time patient was practically well and able to go without the crutches. Is still under observation and all right except that he wears the elastic stocking.

Case II. P. S., aged forty-eight, has general reddened, angry, moist—from exudation—condition of the entire circumference of the lower two-thirds of right leg. Also considerable swelling, intense itching at times, and an ulcer just internal to the crest of the tibia in the middle of the lower third an inch in diameter. Has also varicose veins. Has had trouble of a similar kind for twelve years and has been treated by numerous physicians, with little or no success, all of whom pronounced the trouble syphilitic.

Although there were some suspicious circumstances, examination failed to reveal satisfactory evidence of syphilitic infection.

In the treatment no anti-syphilitic medication was employed but patient treated as in "CASE I." Cure was complete in three months.

Will say, in this connection, that I regard the cotton bandage as much superior to the rubber where there is much exudation, as it allows evaporation to take place. In conclusion, I will refer briefly to the constitutional treatment.

As conditions which predispose to it necessarily aggravate or prolong the disease, it is essential that the constitutional predisposing condition be at least corrected, or that the general system be kept in a condition that will necessarily favor the desired reparative process. I think in the majority of such cases we find a faulty digestion; by the imperfect performance of which function and the consequent taking up by the lacteals of material, which instead of being nutritious and purifying to the blood acts as a poision to it, I think it is fair to presume all diseases are influenced, and many, apparently remote affections, solely depend. I consider it, therefore, very essential that the alimentary canal receive due consideration.

And again, in many eczematous subjects with ruddy comp'exion and apparently the picture of health, we may have a

good digestion and assimilation but an imperfect *elimination* and hence, of course, a vascular fullness and consequent hyperæmia or congestion of the cutaneous capillaries that may explain the rosy complexion; a condition which only requires the slightest external irritation to kindle an acute eczema. This condition can invariably be overcome by the continued use in small doses before each meal of a saline laxative, of which there is none better than sulphate of magnesium; which, together with reducing vascular fullness and consequent cutaneous hyperæmia, very much favors digestion. In short, measures are always indicated which tend to establish and maintain harmony in the performance of the functions of the various organs of the body. Arsenic, which has always been so popular a remedy in skin affections, I very rarely use; I think in many cases it does harm. Chrysarobin, internally, which has recently been so highly recommended by Stocquart, I have tried without any visible benefit.

2200 Michigan Ave.

EDITORIAL.

THIRTY-FIFTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY.

The thirty-fifth annual meeting of the Illinois State Medical Society, held at Springfield, on the 19th, 20th, and 21st of May, was marked by many pleasant features. The work of the general and special committees was well performed, although there was a notable absence of several chairmen.

Few papers, containing the results of original investigation, were read, and for the prizes established last year, at the meeting of the Society in Chicago, no papers were offered to the committee.

The Society has ample funds to encourage original research, and it is to be regretted that a portion of the surplus of nine hundred dollars, reported by the Treasurer as remaining in the treasury, should not have been expended in this manner.

The membership of the Society numbers over four hundred. About one hundred and forty delegates and permanent members responded to the roll-call. We sincerely hope that the representation, next year, at Bloomington, will be more nearly adequate, from a numerical point of view.

The reports of the Committees on Medical Legislation and State Medicine were encouraging in the highest degree. This fact is due to the arduous labors of the members of the committees and to the unusually large representation of the profession in the Senate and House. Four members of the regular profession are State Senators, and eight, members of the House.

It is believed that both the Anatomy Bill and the "Campbell" Bill, relative to the commitment of the insane, will become laws before the present session closes.

While discussions were neither frequent nor brilliant, there was a pleasurable absence of all bickering and wrangling.

The social character of the meeting was maintained to an eminent degree. His Excellency, General Richard J. Oglesby Governor of the State of Illinois, and Mrs. R. J. Oglesby, tendered the members of the Society a reception on Tuesday evening. On Wednesday evening, receptions were held at the residences of Dr. and Mrs. B. M. Griffith, Dr. and Mrs. F. L. Matthews, Dr. and Mrs. H. B. Buck.

OPERATION FOR RUPTURED SAC IN EXTRA-UTERINE PREGNANCY.

An editorial appeared in the *Journal of the American Medical Association*, May 23d, 1885, entitled "*Operation for Ruptured Extra-uterine Pregnancy*," which maintains with much of the same positive and unphilosophical dogmatism the position of Wiltshire, Lawson Tait and Knowlsley Thornton with reference to operative interference in all cases of rupture of the cyst in ectopic pregnancy.

An editorial appeared in the *New York Medical Record*, Oct. 25th, 1884, upon the same subject, which contains the following words:

"There is no palliative measure for a ruptured extra-uterine cyst; there is no expectant treatment; and there is no other way known to medicine by which a woman in this condition can be reasonably expected to survive, save by the prompt use of the knife, and there is no reason for thinking that she would die if this be resorted to in time."

It is difficult to conceive of an adequate reason for the in-

dulgence in that *fallacy of generalization* in this connection,—the use of the universal proposition,—unless it be true that "a mixture of lie doth ever add pleasure."

Mr. Lawson Tait's statement, "That the great bulk of such cases (ruptured cyst of ectopic pregnancy) have a fatal termination when left alone," is opposed by an equally positive conviction, expressed by Professor Karl Schrœder: "I, myself, so frequently see cases of tubal pregnancy, in which the diagnosis is positive, pursuing a favorable course, that I consider recovery as the regular termination." (*Karl Schrœder's Lehrbuch d. Geburtshülfe, Bonn. 1884, p. 422.*)

If human opinion is of purely relative value, we are very decidedly of the persuasion that more importance should be attached to the *dictum* of the German observer, as the resultant of greater experience and more extended observation, than to that of the distinguished surgeon of Birmingham. Regard the natural history of the condition:

I. *The sac may rupture, but the egg may remain within and act as a spontaneous tampon.* Such cases, with favorable terminations to the mothers, have been observed by *Wiedersperg* and *Virchow.* (Otto Spiegelberg's Lehrbuch d. Gebertshülfe, Lahr, 1882, p. 290.)

Operative interference under such conditions is plainly contra-indicated.

II. *The cyst may rupture into the ligamentum latum with the formation of a hæmatoma. Schuchardt, and J. Veit (Virchow's Arch., Bd., 89, p. 133. Die Eileiterschwangerschaft, von Dr. J. Veit, Stuttgart, 1884)* have observed this termination. The embryo usually dies, and undergoes reductive metamorphosis, while hæmorrhage is checked by the pressure of the folds of the broad ligament. Primary laparotomy in such cases is obviously contra-indicated, unless the hæmorrhage is uncontroll-

able, or there is reason to believe the embryo will develop in its new location.

IV. *The sac may rupture and the fœtus escape into the peritoneal cavity, with the formation of a retro-uterine hæmatocele. Ollivier, Leclerc, Schrœder, Vignès, Gallard, Karl Braun, Veit, Chiari* and others have observed this mode of termination. Hæmorrhage is a prognostic element of less serious import in these cases than peritonitis. Early operative interference is contra-indicated by the fact that most of these cases recover spontaneously.

V. *The sac may rupture into the peritoneal cavity, and the life of the woman may be threatened by free hæmorrhage, or the resulting peritonitis.* Fatal hæmorrhage even under these circumstances is seldom observed, according to Dr. J. Veit, when rational expectant treatment has been practiced.

In the limited space at our command, we cannot discuss this interesting subject more thoroughly.

Finally, we desire to call the attention of the profession to the concluding paragraph in Dr. J. Veit's monograph, *Die Eileiterschwangerschaft*, as more in consonance with the present state of our knowledge, than the statements of Wiltshire, Lawson Tait, or Knowlsley Thornton.

"*Therefore, I advise, when the diagnosis of uncomplicated tubal pregnancy is made, the extirpation of the sac; in case of the formation of an hæmatocele, as in the death of the fœtus, rest and the expectant plan of treatment; in case of rupture of the cyst into the abdominal cavity, the compression of the abdominal aorta, etc., and only under the most extreme conditions to resort to direct arrest of hæmorrhage by laparotomy.*"

SOCIETY PROCEEDINGS.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Stated Meeting, Friday Evening, 19th April, 1885.

I.—FENGER. Chronic Peri-uterine Abscess, with the Demonstration of a Specimen.

II.—JAGGARD. Remarks upon a Teratom, with Exhibition of a Specimen.

The meeting was called to order by the President, Dr. H. P. MERRIMAN.

Professor CHRISTIAN FENGER narrated the following histories of three cases of chronic peri-uterine abscess:

CASE No. I. The patient, thirty-eight years old, married for a number of years, entered the Cook County Hospital one and one half years before the operation, with an attack of acute parametritis; pain and fever continued for five or six weeks, until the abscess burst into the rectum, and temporary relief was experienced. Pus, with periodic exacerbations of pain and fever, was discharged at intervals through the rectum until towards the end of the second year, when she entered the hospital for the second time.

Status præsens.—Temperature, morning, 101.2° F., evening, 103.5° F.; pulse, morning, 102, evening, 130. She is not emaciated, but there is œdema around the eye-lids.

On examination, a tumor, composed of plastic exudate, was found to the left and behind the uterus, pus was discharged with the fæces every two or three days; the communication

between the rectum and abscess, surrounded by granulations, was found about three inches above the anal orifice. A tumor, extending three inches in every direction and reaching within one and one-half inches of the umbilicus, was found above the symphysis.

URINE; acid reaction, contains albumen and casts.

At no place in the vagina, could any prominence of the tumor be felt.

OPERATION; LAPAROTOMY. An incision in the median line revealed a red tumor, extending three inches in every direction. It was impossible to distinguish, by vision, between uterus and abscess. An aspirator needle was inserted into the supposed abscess, and two or three ounces of fœtid pus were removed. An incision was made with a knife through the uppermost portion of the abscess, the walls scraped, a drainage tube brought out through the vagina, and the sac united to the abdominal incision by two rows of sutures.

On the third day the temperature was 103° F., and blood oozed through the abdominal incision. The wound was opened and two or three ounces of bloody serum were removed from the right iliac fossa, and the drainage tube was shortened. Twelve days aftewards the temperature became subnormal and the woman died in wild delirium.

AUTOPSY; Peritoneal cavity healthy; drainage tube, one inch long, in the bottom of the sac, which did not communicate with the general peritoneal cavity. The spleen was slightly enlarged, and had undergone amyloid degeneration,—typical sago spleen. The kidneys normal in size, and of normal macroscopical appearance, showed evidence of amyloid change in the glomerules, upon application of the iodine test. When examined with the microscope, amyloid degeneration was perfectly plain. The cause of death was uræmia. The abscess

was located in the uterine half of the left broad ligament, and the left ovary was missing. On the right side, the Fallopian tube was found embedded in a mass of connective tissue and the remains of an old hæmatocele. The Fallopian tube on the right side permits the entrance of a probe into the abscess cavity.

The operation was performed in the autumn of 1884.

CASE No. II. was one of acute parametritis, which occurred nine months prior to operation.

The abscess, situated high up behind the uterus, discharged into the rectum at periodic intervals; exacerbations of pain and fever were constant; progressive loss of weight and strength.

The tumor could be felt through the abdominal parietes, between the symphysis and umbilicus, presenting some of the appearances of the gravid uterus.

OPERATION; LAPAROTOMY. Upon incision through the median line, the same red tumor appeared. One ounce of pus was evacuated, and then it was noted that the interior of the sac was covered with a peculiar, cauliflower growth. The color was gray-white, not yellow. On this account, it was thought to be sarcoma.

This cauliflower growth was scraped out, and microscopical examination showed that it was tubercle (miliary) and not sarcoma. The cavity of the abscess was washed out, drainage effected through the vagina and the sac united to abdominal incision as in CASE No. I.

Within two weeks the tumor entirely disappeared, but a fistulous tract through the abdominal incision remained. This fistulous tract ultimately healed.

The tuberculous mass was entirely removed by scraping and subsequent washing out with potassium hydrate. One

year later, the patient died. She had obstinate diarrhoea, and intestinal pain. The presumption is that she died from tuberculous ulceration of the intestine.

Sections of the cauliflower growth, exhibiting giant cells and other morphological constituents peculiar to tubercle, were demonstrated to the Fellows.

CASE No. III. was one of acute parametritis, which occurred four months before operation. The abscess opened into the rectum, as in the two former cases.

OPERATION; LAPAROTOMY. The abscess contained one pint of pus. The abscess cavity was treated as in the two former cases, with the exception that drainage was effected through the abdominal incision,

A serous cyst was also emptied. In six weeks, no trace of the abscess could be found, except a fistulous tract through the abdominal incision, which healed in three or four weeks.

REMARKS.—A chronic peri-uterine abscess may be tapped below the symphysis, through the vagina, or above the symphysis. Spontaneous cure, by opening into the bladder, rectum, or vagina, is always imperfect.

These abscesses, in the uterine half of the broad ligament, do not belong to the more common circumscribed collections of pus, pointing near Poupart's ligament.

When the abscess points through the vagina, the indication is clear.

When it does not, dissection through the vagina, along the posterior wall of the uterus, and forcing an opening into the cavity, is subject to the following objections:

I. Danger from hemorrhage. It is difficult to tell where large vessels in the abscess wall may be. The vessels are usually larger than normal. Then it is difficult to place a ligature around a bleeding vessel, as the uterus is fixed.

II. There is great danger of opening the general peritoneal cavity in dissecting up along the posterior uterine wall.

Laparotomy reveals the abscess in all its relations, and it is possible to prevent the access of pus to the abdominal cavity. The operation, devised by Lawson Tait, deserves election.

Schroeder has effected cures in two cases by the *sectio alta*, by dilating the communication between bladder and abscess. The communication between the abscess cavity and the viscus was old.

It is strange that few operators in Europe have practiced Tait's operation. Lawson Tait and a few Englishmen are the only surgeons, who advocate the measure.

Chronic peri-uterine abscesses of the character to which allusion has been made, are of frequent occurrence.

DISCUSSION.

Dr. EDWARD WARREN SAWYER, referred to a case of chronic peri-uterine abscess, seen in consultation with Dr. Charles Gilman Smith, in which enormous quantities of pus were discharged *per urethram.*

A vesico-vaginal fistula was made, and drainage through the *bas-fond* of the bladder into the abscess cavity was attempted The operation was abandoned, as it was found impossible to establish any communication by finger or catheter. In this case, there was an enormous dropsical swelling of the genitalia and leg on the right side, due, as suggested by Professor Fenger, to thrombosis of the iliac vein.

Professor E. C. DUDLEY inquired whether a quantitative examination of the urine for urea might not establish the fact of kidney disease, and consequently a contra-indication to operative procedure.

Professor FENGER replied that he did not know to what extent amyloid change might disappear. In cases of chronic

suppuration, the liver may become enlarged, but it may become reduced in size again.

Albuminuria was only a relative contra-indication to operative procedure.

Professor C. E. DUDLEY related the histories of two cases of chronic peri-uterine abscess.

CASE No. I. was that of an abscess of the left broad ligament which opened into the vagina. The opening was dilated, and a double drainage tube inserted. The case was seen by Professer Fenger. The woman did well for a time, but after many ups and downs, died at the end of the year.

AUTOPSY. All the pus in the pelvic cavity was found well drained, but one small cavity, which contained about three ounces of horribly fetid pus, was found above the symphisis attached to the anterior abdominal wall. Lawson Tait's operation would, in all probability, have saved ber life.

CASE No. II. occurred in Mercy Hospital and presented many points in common with Professor Fenger's first case. Large quantities of pus were discharged *per rectum.* He urged Tait's operation.

The patient refused, and left the hospital in disgust, but returned within three months in blooming health, and showed no traces of the abscess. Tait's operation might have resulted fatally.

Professor W. W. JAGGARD raised the question as to the distinction between Tait's and Volkmann's operations. Dr. Franklin H: Martin had reported a case of pelvic abscess, treated by Volkmann's method, to the CHICAGO MEDICAL SOCIETY, during the past year. It did not differ essentially from the method pursued by Professor Fenger. He merely desired to suggest the subject of correct nomenclature

PROFESSORS FENGER and DUDLEY thought that Dr. Martin's case was one of Tait's operation.

Professor W. H. BYFORD said that in all cases in which there is a tortuous communication between rectum, vagina, or bladder, there is an intermittent discharge of pus. Unilocular abscesses were the rule; multilocular abscesses, of the nature of Professor Dudley's CASE, No. I., were the exception.

Unilocular abscesses, as in Professor Dudley's CASE No. II., have a tendency to spontaneous recovery. Professor Byford had demonstrated that these cases recover by granulation. The fungoid granulations spring up, and close in the abscess cavity. In other cases, the interior of the sac is glazed over with cicatricial tissue, serum fills up the cavity, and serous tumors are produced, which may disappear, but usually persist.

In extreme cases of chronic peri-uterine abscess, the question of operative procedure comes up.

Professor Byford was opposed to the line of treatment suggested by Professor Fenger. The *sphincter ani* should be dilated, or incised; the communication between abscess cavity and rectum dilated by fingers, steel dilator or knife, the cavity of the abscess scraped or washed out, and drainage effected *per rectum*.

Complete evacuation of pus, and sac-contents, could be effected in this manner without invasion of the general peritoneal cavity.

When the communication through the bladder was also established, he would treat the cases in the same way, or dilate the urethra, and proceed in the manner indicated.

After simple evacuation of purulent contents, abscess cavities do not always collapse. They may remain patulous. Their walls are frequently of great thickness and cartilaginous hardness.

It is usually necessary to scrape the cavity and establish a new action in the pyogenic membrane.

Schroeder's operation of dissecting up from below, through the vagina, along the posterior uterine wall, was justly considered dangerous.

Professor Byford had, on two or three occasions passed a sound into the rectum, cut down on the instrument, and kept the tract patulous by tents.

Professor CHRISTIAN FENGER closed the discussion by saying that he thought Professor Byford's suggestion as to drainage through the rectum impracticable when the opening was high up. It was always dangerous on account of the proximity of the general peritoneal cavity.

Professor E. C. DUDLEY asked "Does the tube remain *in situ* when the bowels are moved?"

Professor BYFORD replied, "Yes."

II. Professor W. W. JAGGARD made the following remarks upon a teratom, with presentation of the specimen.

The teratom, or *portentum*, to which he desired to call attention, was sent for examination by Dr. J. L. Brenton and Dr. A. C. Helm, of Beloit, Wis.

He had not received any history of the case, and therefore merely called attention to the macroscopical characters of the object, reserving for a future occasion the discussion of the results of dissection.

The head presents a typical example of hemicephalus, or anencephalus, referable to Rokitansky's class A, deformities resulting from insufficient development.

Such fœtuses are often notable on account of remarkable development; the quantity of *liquor amnii* is usually large. They may assume longtitudinal or transverse presentations. When the vertex presents, the diagnosis is frequently of a very puzzling character.

CAZEAUX suggests as a valuable sign, under such circum-

stances, the convulsive movements of the child in the uterus, as the result of the direct irritation of the basal ganglia.

By this means, CAZEAUX and DUBOIS have been enabled to make a diagnosis before rupture of the membranes.

Version is usually indicated in these cases, if the presentation is that of vertex, not engaged.

The second object of interest, in connection with the teratom, is the large tumor of the ano-perineal region. Rokitansky refers these cases to class B, teratoms, as the result of pathological excess of development.

Tumors of the ano-perineal region are divided by Braune into the following classes:

(1) Tumors, after the exclusion of fœtation by inclusion, the connection of which with the special canal has been demonstrated.

(2) Degeneration of the gland of Luschka.

(3) Sacral Hygroma.

(4) Coccygeal tumors, fibromata, cysto-fibromata, cysto-carcinomata.

(5) Hydrorachis.

(6) Lipomata.

(7) Tumors, observed in adults, the congenital nature of which is not absolutely proven.

W. W. JAGGARD, M. D., Editor.

2330 Indiana Ave., 21st April, 1885.

THIRTY-FIFTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, SPRINGFIELD, ILL., MAY 19TH, 20TH AND 21ST, 1885.

First Day—Tuesday, May 19th.

MORNING SESSION.

The Society was called to order at 10 A. M., by the President, Dr. D. S. BOOTH, of Sparta. After prayer by Rev. F. H. MUSGROVE, of Springfield, the address of welcome was delivered by his Excellency, GENERAL RICHARD J. OGLESBY, GOVERNOR OF THE STATE OF ILLINOIS. Governor Oglesby's remarks were brief and felicitous.

He desired to welcome the members of the Illinois State Medical Society to the Capital, as gentlemen, citizens and physicians. He congratulated the people of the State, that so many representative medical men could be found willing to leave their homes, with absolute unselfishness, to consult together for the public good. To the physicians, more than to any other body of men, is entrusted the health, prosperity and life of the people. The fact of this annual convention, attended by so many medical men, who had at considerable sacrifice forsaken their daily avocations, was self-evident proof of their devotion to the profession of medicine and surgery and to the trust reposed in them.

He recognized in the science of medicine and surgery a field of infinite possibility as regards development. It was the function of these annual meetings to lift the subject above illiberal and envious criticism, and establish it upon a more enduring basis than that of empiricism. It was true that the science of medicine and surgery was not as exact as geometry,—a necessary consequence of the complex character of the phenomena. It was, however, absolutely the only guardian standing between men and the effects of disease and accident.

There were dubious matters in every department of human activity, but in medicine and surgery that doubt assumed enormous importance, as human life was the issue. Uncertainty in diagnosis and treatment,—and every physician must at times be puzzled,—only increased the dignity of the profession, since the mental agony experienced by an honest, conscientious man under these conditions was greater than in any other pursuit. This sense of moral responsibility must be greater in the physician than in the pure scientist, lawyer, or even divine.

Dr. E. P. COOK, of Mendota, replied in appropriate terms to Governor Oglesby's address of welcome.

The President, Dr. D. S. BOOTH, delivered the usual annual address, under the title of

"HASH."

Dr. Booth discussed, in a humorous way, a variety of topics. At the ninth annual convention of the American Academy of Medicine, in Baltimore, 1884, a committee was appointed to memorialize Congress with reference to the establishment of a National Board of Medical Examiners.

Dr. D. S. Booth recommended the appointment of a similar committee from the Illinois State Medical Society, which should memorialize the State Legislature upon the same subject.

Female education, general and medical, was discussed at length. The germ theory of disease, the dangers of specialties, and sanitation received attention.

AFTERNOON SESSION.

Reports of General Committees.

GYNECOLOGY.—David Prince, Jacksonville; Sarah H. Stevenson, Chicago; O. B. Will, Peoria.

Dr. DAVID PRINCE, of Jacksonville, read a report on recent

progress in gynecology, and exhibited a large number of instruments.

In the treatment of pelvic plastic exudates and uterine hyperplasia, he recommended, in addition to hot water, vaginal irrigation,—insisted on especially by Dr. Emmet,—the employment of the interrupted current.

OBSTETRICS.—C. W. Earle, Chicago; T. D. Washburn, Hillsboro; Anna S. Adams, Peoria.

Professor CHARLES WARRINGTON EARLE, of Chicago, read an interesting and valuable report on Obstetrics, in which allusion was made to the following topics:

At a meeting of physicians and surgeons in London, some years ago, an eminent member of the profession said, "Thank God! I know nothing of midwifery!" Modern science does not commend the insular arrogance of the remark.

ANATOMY AND PHYSIOLOGY.— Professor W. W. Jaggard, of Chicago, read a paper before the Obstetrical Section of the American Medical Association at its last annual meeting, in which recent progress upon the condition of the cervix during pregnancy and labour was sketched.

A gradual reversion to the views of the older obstetricians, Roederer and his pupil, Stein, Sr., had occurred within the past fifteen years. It was probable from the researches of Carl Braun (1857), Wilhelm Braune, Ludwig Bandl, Kuestner and Lahs, that during the latter months of pregnancy the supravaginal portion of the cervix is drawn up so as to form part of the general uterine cavity. While it is impossible to assert dogmatically that the contraction ring of Schroeder, the obstetrical internal os of Spiegelberg, the pelvic inlet stricture of Lahs, the ring of Bandl, the clinical or mechanical os of Ebell, are identical with the anatomical internal os, the weight of probable evidence is in favor of such a view.

THERAPEUTICS.— Professor Earle referred to the oxytocic properties of *Cimicifuga Racemosa.* (See CHICAGO MEDICAL JOURNAL AND EXAMINER, April, 1885, "*The Influence of Cimicifuga Racemosa on Parturition,*" by Professor J. Suydam Knox); the external use of chloroform in labour; use of muriate of cocoaine in cases of rigid os, and perineum.

The value of electricity in the vomiting of pregnancy, post-partum hemorrhage, induction of premature labour, weak pains, was discussed at length, and the views of Dr Bater, of Texas, cited.

The bichloride of mercury had replaced carbolic acid among antiseptics, although there were cases of mercurial poisoning reported.

PATHOLOGY.—Since the time of Dr. C. W. Lever (1843), the association of albuminuria with puerperal eclampsia had been observed. Dr. Fry, of Washington, had recently discussed the pathology of the condition, and it was probable that eclampsia is not always due to uræmia. In addition to the other remedies, commonly employed, Professor Earle suggested *apocynum cannabinum.*

PRACTICE OF OBSTETRICS.—Occipito-posterior positions were more frequent than the older English text-books would lead one to believe. Leishman, in particular, was in error upon this subject.

Dr. Edward Warren Sawyer, of Chicago, had read a paper upon this topic before the American Gynecological Society, last October. Of Dr. Sawyer's forty-two cases, thirty-nine were right occipito-posterior, three left occipito-posterior; as to occurrence, one out of every five vertex presentations assumed this position.

Professor Earle recommended the manœuvre of Schatz, in the transformation of *face* into *vertex* presentations.

The old doctrine of the application of forceps in *breech* presentations had been revived. Professor Earle sanctioned the use of the instrument, under such conditions, believing it to be less harmful than the blunt hook.

Dr. Henry T. Byford's paper on "The Functions of the Membranes in Labour," (CHICAGO MEDICAL JOURNAL AND EXAMINER, March, 1885), deserved careful consideration. Dr. Byford was convinced of the possibility, probability and utility of preserving the membranes in labour until they dilate or aid in dilating the vulva.

In the immediate repair of a lacerated perineum, Professor Earle recommended the single suture method, suggested by Dr. Alloway, of Montreal.

In the treatment of retained membranes, in abortion, premature labour, or labour at term, there was great difference of opinion. Professor Earle would select a line of treatment which could not be termed meddlesome nor dilatory. He would not allow retention of the membranes to exist when they could be removed. Neither would he invert the uterus to peel off a shred of decidua. It was necessary to distinguish between simple retention of the separated placenta, on account of stricture of the internal os, and the placenta retained as the result of abnormal adhesion.

EXTRA-UTERINE PREGNANCY is of more frequent occurrence than was formerly believed. During the early months of pregnancy, Dr. Thomas's method of destroying the embryo by means of the interrupted current was the most rational mode of treatment.

When the full term of utero-gestation had expired, and the fœtus was living, laparotomy was indicated. When the term of gestation was prolonged, and the fœtus was dead, an expectant course of treatment should be pursued.

DISCUSSION.

Dr. DAVID PRINCE of Jacksonville, recommended the affusion of cold water upon the abdominal surface as the most efficient and least harmful method in the treatment of post-partum hemorrhage. He narrated the history of a case of post-partum hemorrhage, occurring in an eclamptic patient, successfully treated by this method.

Dr. C. TRUESDALE, of Rock Island, always advised the immediate operation for lacerated perineum. He did not recommend the single suture plan, as the surfaces ought to be very accurately approximated.

If this was not accomplished, pockets for the collection of pus and lochia would be formed, and the woman's condition would be more precarious than with the open wound.

Dr. WYNER, of Gilmore, always ruptured the membranes in labour when the cervix was fully dilated.

Dr. WENGER, of Gilman, was of the opinion that the configuration of the head could not be as favorable when the bag of waters was not ruptured. He always ruptured the sac of the amnion when the cervix was fully dilated.

Professor F. E. WAXHAM, of Chicago, had treated successfully over one hundred cases of retained placenta. He had used forceps and curette in but one case, and would not do so again. He removes, with his fingers, everything that can be removed; when decidual shreds remain within the uterine cavity, he irrigates twice daily with large quantities of carbolized water and exhibits ergot.

Dr. KREIDER, of Springfield, exhibited an improvised coil of rubber tubing, mounted on paste-board, to be used for mediate irrigation.

MATERIA MEDICA AND THERAPEUTICS—T. M. McIlvaine Peoria; J. F. Todd, Chicago; Catherine Miller, Lincoln.

Dr. T. M. McILVAINE, of Peoria, read a paper entitled "Medicinal and Non-Medicinal Therapeutics." Dr. McIlvaine disavowed any intention at plaigiarism. Dr. Austin Flint, Sr., had recently read a paper upon the same subject before the New York State Medical Association. Dr. McIlvaine referred to the optimists and pessimists in therapeutics. Between these extremes the body of the profession took its position. Therapeutics was derived from the Greek verb *therapeuo*, which meant to *wait upon* the sick or *alleviate* their sufferings, not to *cure*, or *drug* them. The lives of remedies were usually short, about twelve years. Statistics prove that the relative mortality in severe disease has not been diminished within the past twenty years. He narrated the history of a case of typhoid fever. The man could retain nothing, but demanded beer. The case was a desperate one, and his request was granted, and nine one-half gallons of beer were consumed in seven days, and the patient recovered.

A desperate case of pelvic cellulitis had recently come under his observation. The woman could not retain anything at all. Persistent nausea, vomiting and retching were so distressing symptoms that, in despair, he allowed her to eat sauer kraut. An uninterrupted convalescence began immediately.

The influence of faith in the treatment of disease received attention.

Dr. E. P. COOK, of Mendota, thought therapeutic agencies might be comprehended under three classes:

1. Positive Medication.
2. Rational Therapeutics.
3. Moonshine.

Drugs, with which positive medication could be effected, were few in number, and included the specifics. A rational line of treatment could be carried out with agents whose physio-

logical action was not definitely known. Under this second class were comprehended by far the greatest number of therapeutic agencies. The third class, moonshine agencies, he would respectfully relegate to those transcendental philosophers, the homœopaths.

Professor N. S. DAVIS, of Chicago, thought there were few members of the medical profession who thought they could *cure* all diseases. Great injustice is done to the profession by indulgence in extravaganzas of this character. The statement of Dr. Chambers, that all disease was a retrograde movement, and that the patient must be supported throughout the condition, was an instance in point. Is this true? Exaltation and pathological increased functional activity demand sedatives. Depression and diminished functional activity demand stimulants. The nearer we keep to true representation, to the *truth*, the better for our own dignity, and the welfare of the world at large.

Therapeutics is the crowning glory of our profession. In the comprehension of this subject, a man cannot narrow down his vision to the condition of a single part. Attention had been diverted from the old, reliable methods of clinical observation to the microscopical study of disease. "Put salt on the microbe's tail, if you please, but don't kill the patient in the procedure." It is better for the microbe to kill the patient than for the physician to kill the patient in his hunt after the microbe.

In conclusion, Professor Davis said he only rose to check what he saw every day, namely, *a tendency to extravagance in every direction.*

Dr. T. F. WORRELL, of Bloomington, had grown up under the Anstie dispensation, and had been taught to employ not more than six or seven drugs. He had recently seen a prescription from a prominent physician, constructed on shot-gun princi-

ples, in which emetic, purgative, diaphoretic, diuretic, stomachic, tonic, alterative, and antiseptic properties or functions were combined.

"Is there a receiving agent, or distributing sentinel stationed in the stomach, who guards the ultimate fate of these products of polypharmacy?"

As a heart sedative, in pleurisy and pneumonia, he employed *veratrum viride;* as an emetic, ipecacuanha; as purgatives, rhubarb, calomel, senna, blue mass.

The incorporation of strychnine in a pill for constipation, on the theory that it increased peristalsis, was absurd. Bleeding, an invaluable resource, under certain conditions, had been relegated to the obsolete procedures of medical art.

Professor F. E. WAXHAM, of Chicago, never prescribed a remedy without a perfectly distinct reason for its exhibition.

Dr. E. P. COOK, of Mendota, desired to protest against the statement that polypharmacy was an outgrowth of the modern school of therapeutics.

Dr. A. WETMORE, of Waterloo, desired to enter a plea for *mistura composita.* A prescription, of the kind to which Dr. Worrell alluded, had its paradigm in the food we eat.

OPHTHALMOLOGY AND OTOLOGY.—W. T. Montgomery, Chicago; C. R. Park, Bloomington; Robert Tilley, Chicago.

Professor W. T. MONTGOMERY, of Chicago, read a report on *Ophthalmology* and *Otology*, in which allusion was made to the following topics:

JEQUERITY.—Two years ago, Professor Montgomery had visited De Wecker's eye clinic in Paris and learned the use of jequerity.

Jequerity was to chronic granular conjunctivitis what irridectomy was to glaucoma. In the Illinois Charitable Eye and Ear infirmary, Professor Montgomery had treated about two

hundred and fifty eyes, in all forms of the disease, except the muco-purulent variety with non-vascular cornea.

A three per cent. infusion was the most eligible preparation. As to method, after eversion of the eye-lids, a brush saturated with the infusion, was passed over the surfaces twelve times. Within twenty-four hours, the desired inflammation, a membranous exudate, was produced. The local disturbance, pain and swelling, was usually slight. The constitutional effects were usually trivial, although chill and fever had in some cases followed. The acme of the inflammation was usually reached at the end of the second day. During this period, the eyes could be bathed with cold water and some anodyne. Usually two applications are required to cure a case.

His results with the drug may be tabulated as follows:

10 % cured by one application.
25 % " " two or three applications.
30 % " " three to fifteen applications.
20 % improved by one application.
20 % not improved at all.

In no case could the inflammation be evoked beyond the fourth time. In only two cases could it be produced three times.

It required one to three weeks for recovery.

He had never seen sloughing of the cornea follow the application, although he had seen three cases of dacryocystitis.

He regarded the drug as almost a specific in chronic granular conjunctivitis with vascular cornea, especially in hard granulations with pannus.

It was not a dangerous remedy, when used with the following precautions:

I. Never employ when the cornea is clear.
II. Repeat only at intervals of twenty-four hours.

III. Permit any inflammation to subside before the second application.

The anæsthetic effect of *Cocoaine* was the most remarkable discovery made since that of general anæsthesia.

Since Nov. 1st, 1884, he had employed that remedy in the following operations:

Cataract, two; needle operations, fifteen; iridectomy, five; iridectomy for glaucoma, two; foreign body in anterior chamber, one; tenotomy, thirty; foreign body in cornea, Bowman's operation for pterygium.

He employed a two to four per cent. solution.

The action of the remedy was not perfectly satisfactory in iridectomy for glaucoma, or in the removal of a foreign body from the anterior chamber. In tenotomy of the *recti*, after injection of a few drops of the solution into the cellular tissue, no pain was complained of.

Ten cases of phlyctenular keratitis, with good results had been treated. In twelve cases of iritis, the relief of pain and other symptoms was only partial. One case of episcleritis was cured by conjoined use of iodide of potassium, bichloride of mercury and cocoaine. As the man had a specific history, it was impossible to tell whether or no cocoaine had effected the cure.

Professor Alfred Graefe's operation, entitled, *Evisceratio bulbi*, as a substitution for enucleation, had two advantages, (1) the danger from meningitis was less; (2) the stump is superior. Professor E. L. Holmes, of Chicago, had for years been performing the same operation, which Graefe claims as original.

In 1876, Professor Montgomery himself had operated by Professor Holmes's method.

CHANCRE OF EYE-LID PRODUCED IN AN UNUSUAL WAY.—Professor Montgomery narrated the history of a case of

chancre of the eye-lid produced by the insertion of the tongue under the palpebral conjunctiva, in an effort to remove a foreign body.

DISCUSSION.

Dr. MENDENHALL, of Georgetown, thought hot applications in chronic granular conjunctivitis better than cold ones.

Dr. J. D. SKEER, of Chicago, wished to inquire whether there was any violent reaction after the use of cocoaine. Does the solution deteriorate with time? He had been told that it was impossible to keep the solution longer than three weeks.

Professor SAMUEL J. JONES, of Chicago, thought that in the employment of jequerity, ophthalmologists were running an unnecessary risk. The local disturbance and constitutional reaction were not trivial facts. To get rid of the opacity, ulceration was produced. This ulceration could not always be arrested when desired, and sloughing of the cornea had resulted. At present, this method of treatment is empirical. We have safe remedies, by which the same result can be secured. A time may come when we shall know more of the physiological action of jequerity, and when it will be employed as a safe and valuable remedy. The patient ought not to be subjected to greater risks than the physician, himself, would assume.

De Wecker secured the drug from a South American patient, and rushed into print after a very inadequate experience with the remedy.

The hydrochlorate of cocoaine was useful in the production of a superficial anæsthesia. In two cases of iridectomy, in his own practice, the drug did not annul all pain. Where general anæsthesia was contra-indicated, the drug would prove invaluable. So much had been claimed in favor of the remedy that he feared reaction, which might prevent its being given the credit to which it is justly entitled.

Professor Montgomery, in reply to Dr. Skeer, said that he had observed no change in the action of his cocoaine solution, and it was three months old. In reply to Professor Jones, he thought that in the treatment of his own case, he would use jequerity.

Adjourned.

Second Day—Wednesday, May 20th.

The Society was called to order by the President, Dr. D. S. BOOTH, of Sparta.

Dr. Prewett, Dr. Dickinson, and Dr. Middlecamp, delegates from the Missouri State Medical Society, were introduced.

Dr. JOHN H. RAUCH, Secretary of the State Board of Health, read a report on Medical Legislation. Dr. Rauch called attention to the bills affecting medical interests, now pending in the Senate and House.

Four members of the Senate and eight members of the House were members of the regular profession.

Dr. A. B. STRONG, President of the Demonstrators' Association of Chicago, made a report on the Anatomy bill. The bill had passed its third reading in both Senate and House. It would probably become a law. Three thousand medical men had responded to communications from the Demonstrators' Association. Every one was thoroughly in earnest.

At a later period, he desired to call attention to the law regulating malpractice suits, but thought all energies, for the present, should be concentrated upon the Anatomy bill.

Dr. D. A. SHEFFIELD, member of the House from Jo Daviess Co., stated that bill No. 73, known as the "Anatomical Bill," would probably become a law, but urged every member of the Society to confer with his representatives upon the subject.

Dr. SHUMWAY, Dr. WHITE, Dr. HANNA, Dr. WEIR, Dr. MILAM,

representatives, were in favor of the bill, and hoped to see it become a law in a few days.

Dr. E. P. COOK, of Mendota, was glad to see so much healthful enthusiasm upon these subjects of so great medical interest.

COMMITTEE ON LEGISLATION FOR THE INSANE.—B. M. Griffith, Springfield, Chairman; Walter Hay, Chicago; J. L. White, Bloomington; F. B. Haller, Vandalia; W. A. Haskell, Alton; E. P. Cook, Mendota; Wm. Hill, Bloomington; A. B. Strong, Chicago.

Professor WALTER HAY, of Chicago, reported that the "Campbell Bill" had already passed its third reading, and he thought it would become a law.

Dr. J. M. FOWLER, member of the House from the fifty-first district, thought the prospect for the success of the Campbell bill was excellent.

NECROLOGY.—E. Ingals, Chicago; William Hill, Bloomington; M. F. Bassett, Quincy.

Dr. M. F. BASSETT, of Quincy, reported one death.

Abner Hard, M. D., of Aurora, was born in New York, 1820; when eleven years old he came to Michigan; in 1884 he took up his residence in Missouri; in 1847 he settled in Aurora. He was graduated at the Keokuk Medical College in 1851, and died March 20th, 1885. He was Surgeon to the Eighth Regiment of Illinois Cavalry, served in every battle from Malvern Hill to Gettysburg, and in 1862 was breveted Lieutenant-Colonel. He was President of the Fox River Medical Association. He died in the line of duty, from blood-poisoning, contracted during an operation.

A recess of ten minutes was given for the selection of a Nominating Committee.

The following Special Committees were then called:

LARYNGOLOGY.—E. F. Ingals, Chicago.

Professor E. F. INGALS, of Chicago, read a paper entitled:

"Recurrent Laryngitis in Relation to Obstruction of the Nares, or Chronic Catarrh."

Dr. J. P. MATTHEWS, of Carlinville, read the history of the following case of tracheotomy for laryngeal obstruction, and exhibited the patient.

The patient, twenty-eight years old, had a good antecedent history. In October, 1884, he caught cold and became hoarse. Dr. Matthews attended him in November, when he had a severe attack of scarlet fever, which lasted thirty days. Hoarseness subsided about the thirtieth day. Dyspnœa increased. The laryngoscope revealed thickening of the arytaeno-epiglottidean folds, and stenosis of the larynx. Bloody pus was expectorated and, in the absence of all pulmonary complications, led to the diagnosis of ulcer, immediately below the vocal cords.

On January 6th, 1885, tracheotomy was performed. A large quantity of bloody pus was expectorated, and the diagnosis of ulcer was confirmed. The dyspnœa was relieved at once. Dr. Matthews thinks the tube can now be removed with safety. He referred incidentally to a case of spasmodic asthma, cured by the treatment of a post-nasal catarrh. The ulcer in the first case was due to typhoid fever.

DISCUSSION.

Dr. PREWETT, of St. Louis, had treated certain cases of obstruction of the posterior nares by breaking off a bit of the septum with Adams' forceps.

He had performed tracheotomy for sudden dyspnœa in a case of pneumonia. A fibrinous cast was expelled from the trachea and the patient recovered.

Professor INGALS thought that laryngotomy must be performed in Dr. Matthews' case.

Professor F. E. WAXHAM, of Chicago, referred to the advantage of intubation of the larynx in cases of stenosis.

PEDIATRICS.—A. F. Rooney, Quincy.

In the absence of Dr. A. F. Rooney, chairman of the Committee, Professor A. E. HOADLEY, of Chicago, read a paper entitled, "Too often Feeding as a Cause of Disease in Infants, and a Protest against one Cow's Milk." The paper was discussed by Dr. Henry T. Byford, of Chicago, Dr. Middlecamp, of Kansas City, Professor F. E. Waxham, of Chicago, and Dr. Milam.

DERMATOLOGY.—W. J. Maynard, Chicago.

Owing to the absence of Professor W. J. Maynard, of Chicago, chairman of the Committee, Professor H. J. REYNOLDS, of Chicago, read a paper, entitled "The Treatment of Eczema." The paper appears in another column of the JOURNAL.

TETANUS.—C. Truesdale, Rock Island.

Dr. C. TRUESDALE of Rock Island, read a report on Tetanus. Dr. Truesdale had recently treated two cases of tetanus by the hypodermic injection of a six per cent. solution of carbolic acid into the cellular tissue of the injured part, and the internal exhibition of morphia, calabar bean, chloral and bromide of potassium, pushed to their full physiological action, and administered in succession. Dr. G. G. Craig, Health Commissioner of Rock Island, had treated two cases in the manner suggested by Dr. Truesdale. The four cases recovered.

INSANITY.—R. J. Patterson, Batavia.

Dr. R. J. PATTERSON, of Batavia, read a report on Insanity. There are in the United States about 100,000 insane persons, a little less than one-half of whom are in hospitals, and a little more than one-half in county alms-houses, jails, and in private families. It is believed that the insane are increasing somewhat beyond the proportionate increase in population. In view

of these facts, it is well to renew the inquiry, if more may not be done than has been accomplished through medical influence, in certain directions, toward the prevention of insanity, in cutting off some of its feeders and drying up some of its sources. It is believed that the family physician should be, and is destined to be, more and more consulted in regard to questions in connection with hereditary influences, and although the questions involved are intensely personal, his opinions, as physician and friend, may sometimes prevent or lessen the *propagation* of those degenerate conditions, and the incurable diseases upon which insanity often depends.

Attention was then called to certain cases of insanity that were believed to be most amenable to treatment at home.

ALCOHOL AS A THERAPEUTIC AGENT.— M. F. Bassett, Quincy.

Dr. M. F. BASSETT, of Quincy, in his report upon alcohol as a therapeutic agent, said that its therapeutic use should be restricted to the four conditions of *shock*, *collapse*, *septicæmia* and *snake-bites*. Even when used under these circumstances, it might be replaced by other, quite as efficient agents. The danger of the formation of the alcohol habit was so great that it should outweigh, in many cases, the direct benefit to be gained.

DISCUSSION.

Dr. E. P. COOK, of Mendota, said that while he deprecated the evil results which sometimes follow the administration of stimulants, yet he desired to make a protest against the reading of temperance homilies before a scientific body of physicians.

Dr. T. F. WORRELL, of Bloomington, endorsed every word Dr. Bassett had uttered.

PHYSIOLOGY.—A. Wetmore, Waterloo.

Dr. A. WETMORE, of Waterloo, read a brief report on recent progress in vegetable physiology.

TREATMENT OF EPILEPSY.—D. R. Brower, Chicago.

Professor D. R. BROWER, of Chicago, drew the following conclusions in his report on epilepsy:

I. Surgical procedures offer the most certain methods of cure,—the removal of cicatrices, trepanation, oöphorectomy and ligation of the vertebral arteries, being the most important.

II. The medical treatment should be mainly addressed to building up the general nutrition of the patients,— brucia, strychnia and arsenic being the most valuable therapeutic agents.

III. Depressing agents, such as the bromides, are palliative rather than curative. To be curative they should be pushed to bromism, hoping thereby to so alter the nutrition of the nerve centers as to make the epileptic habit impossible, when they are withdrawn.

ON THE INFLUENCE OF APPRECIABLE METEOROLOGICAL AND TOPOGRAPHICAL CONDITIONS ON THE PREVALENCE OF ACUTE DISEASES.—N. S. Davis, Chairman, Chicago; J. H. Hollister, Chicago; J. F. Todd, Chicago; E. P. Cook, Mendota; G. W. Jones, Danville.

Professor N. S. DAVIS, in his report, said that stations and observers throughout the State had been selected, and instruments of precision distributed. No facts of importance had accumulated as yet, as the work had only been completed within the past year.

On motion, the report was accepted, and the committee continued.

Dr. H. R. GUTHRIE, of Sparta, read a paper on medical education.

The continuation of the paper was referred to the first order of business on Thursday morning.

Third Day—Thursday, May 21st.

MORNING SESSION.

The society was called to order by the President. Dr. D. S. BOOTH, of Sparta.

Dr. Guthrie completed the reading of his paper.

Dr. G. N. KREIDER, of Springfield, read a paper on medical education, in which he complimented the Direction of Cornell University on the excellent preliminary course to the study of medicine.

DISCUSSION.

A lively debate on the papers of Drs. Guthrie and Kreider ensued, in which Dr. Milam, Dr. H. T. Byford, Dr. A. Wetmore, Professor C. W. Earle, Dr. Myers. Dr. Wenger, Dr. Remsburg, Dr. Veatch, Professor F. E. Waxham, took part.

The following General Committees were then called:

PRACTICAL MEDICINE.—Norman Bridge, Chicago; C. H. Norred, Lincoln; J. R. Livingood, Rossville.

Owing to the absence of Professor NORMAN BRIDGE, of Chicago, a brief abstract of his report was read. The following topics were discussed:

1. Intubation of the Larynx, with exhibition of instruments.
2. Fever viewed as a physiological process.
3. Cholera,—prophylaxis.
4. Trypsin as a solvent of croupous or diphtheritic exudate.
5. Treatment of Typhoid Fever.
6. Inhalation of defibrinated blood.
7. Hypodermatic injection of human blood.

Dr. C. H. NORRED, of Lincoln, read a supplementary report on the Practice of Medicine, embodying a stenographic report of the evidence in the Burns-Carpenter case.

Dr. Norred claimed that experts can determine, by post-mortem signs, the probable time of death. Temperature of the cadaver is not so important a sign as *rigor mortis*.

SURGERY.—W. A. Byrd, Quincy; D. A. K. Steele, Chicago; Cass Chenowith, Decatur.

Dr. W. A. Byrd, of Quincy, read a report on Surgery. After referring to recent contributions to surgical literature during the past year, he called attention to a new tourniquet, applicable in cases of hip-joint amputation. He narrated the histories of two cases, in which the tourniquet was employed with a minimal loss of blood.

The Society adjourned at 12:30 P. M.

Report of the Nominating Committee.

President.—W. A. Byrd, of Quincy.

First Vice-President.—W. T. Kirk, of Atlanta.

Second Vice-President.—A. Wetmore, of Waterloo.

Permanent Secretary.—S. J. Jones, of Chicago.

Treasurer.—Walter Hay, of Chicago.

Judicial Committee.—E. Ingals, of Chicago; F. B. Haller, Vandalia; W. Hill, Bloomington.

Assistant Secretary.—Hiram Luce, Bloomington.

Members of Committee of Arrangements.—J. L. White, T. F. Worrell, Lee Smith, A. T. Barnes, Wm. Hill, of Bloomington.

GENERAL COMMITTEES.

Practice of Medicine.— M. F. Bassett, Quincy; J. J. M. Angear, Chicago; H. R. Guthrie, Sparta.

Surgery.—C. Truesdale, Rock Island; T. M. McIlvaine, Peoria; M. Reece, Abingdon.

Obstetrics.—W. W. Jaggard, Chicago; Hugo Rothstein, Waterloo; E. A. Ingersoll, Canton.

Gynecology.—J. H. Etheridge, Chicago; M. J. Mergler, Chicago; C. C. Hunt, Dixon.

Drugs and Medicines.—E. B. Montgomery, Quincy; J. M. G. Carter, Waukegan; Katharine Miller, Lincoln.

Ophthalmology and Otology.—Robert Tilley, Chicago; A. C. Carr, Carlinville; W. T. Speaker, Mt. Morris.

Necrology.—E. Ingals, Chicago; Wm. Hill, Bloomington; G. W. Cox, Clayton.

SPECIAL COMMITTEES.

Orthopedic Surgery.—C. E. Webster, Chicago.

Diseases of Children.—F. E. Waxham, Chicago; C. B. Slater, Aurora.

Microscope in Gynecology.—O. B. Will, Peoria.

Dermatology.— H. J. Reynolds, Chicago; W. J. Maynard, Chicago.

Physiology.—A. Wetmore, Waterloo.

Insanity.—A. T. Barnes, Bloomington.

Committee on Legislation for the Insane.—Walter Hay, Chicago; E. P. Cook, Mendota; F. B. Haller, Vandalia.

Medical and Sanitary Legislation.—B. M. Griffith, Springfield; M. W. Seaman, Shipman; J. L. White, Bloomington; W. A. Haskell, Alton; A. B. Strong, Chicago.

Biographical Committee.—J. H. Hollister, Chairman, Chicago; E. P. Cook, Mendota; E. Ingals, Chicago; J. T. Curtis, Otterville; D. E. Foote, Belvidere; George W. Jones, Danville; F. B. Haller, Vandalia; T. F. Worrell, Bloomington; Washington West, Belleville; Robert Boal, Peoria.

On the Influence of Appreciable Meteorological and Topographical Conditions on the Prevalence of Acute Diseases.—N. S.

Davis, Chairman, Chicago; J. H. Hollister, Chicago; J. F. Todd, Chicago; E. P. Cook, Mendota; G. W. Jones, Danville.

Committee on Publication.—J. F. Todd, Chairman, Chicago.

Place of next meeting—Bloomington, Ill.

Day of next meeting—Third Tuesday in May, 1886.

The report of the nominating committee was adopted.

A CRITICISM OF DR. LEEDS'S PAPER ON "THE COMPOSITION AND METHODS OF ANALYSIS OF HUMAN MILK." *By* A. V. MEIGS, M. D., *Physician to the Pennsylvania Hospital and to the Children's Hospital.*

[Read May 6, 1885.]

College of Physicians of Philadelphia, stated meeting held May 6, 1885, the President, Dr. J. M. DaCosta, in the chair.

Denial and reiteration prove nothing. I shall, therefore, endeavor to restrain myself from the use of either of them in my effort to compass my present purpose, which is to persuade the profession of the truth of what I advanced in regard to the composition of human milk, in a paper read before the Philadelphia County Medical Society about a year ago.* I brought forward then certain arguments which seemed to me to prove conclusively that human milk contains only about one per cent. of casein. Those arguments it is not necessary for me to repeat, especially as I have nothing new to advance, and I must therefore refer any one to whom the subject is new,

* Proceedings of the Philadelphia County Medical Society, vol. vi., 1883-4.

but who feels an interest in it, to my former paper. At present I wish merely to criticize the results arrived at by Dr. Leeds, and detailed in a paper read before the College.†

In such a criticism I shall not, of course, be restrained by a false delicacy from using all legitimate means to show why we should decline to accept Dr. Leeds's conclusions. The question in dispute is, how much casein human milk contains, and particularly what is its quantity relatively to that contained in cow's milk. Upon the decision of this question must depend the lives of a very large number of infants, for the conclusion at which we arrive as to the relative composition of the two kinds of milk must necessarily decide how we will use cow's milk as a food for young infants.

Dr. Leeds, in his paper, proceeds first to criticise previous methods of analysis and then goes on to describe the method used in obtaining his own results. I shall, therefore, begin by taking up his strictures upon my method of analysis, and then will discuss his own conclusions. In order that his criticism of the method I suggested may be understood, I shall have to give a brief description of my process as originally described. This was first published in the *Philadelphia Medical Times*, July 1, 1882, the paper having been read at the Philadelphia County Medical Society, the previous February.

To carry out the method, 15 c.c. of milk are required. Discharge 5 c.c. of milk from a pipette into a platinum dish and weigh; dry over a water-bath at 100° C. until the weight becomes constant, then incinerate, beginning with moderate heat and finally using the blast flame. This gives the water, total solids, and ash. Discharge 10 c.c. of milk in another dish and weigh, taking care that the weight be exactly double the first

† Transactions of the College of Physicians of Philadelphia, 3d Series, vol. vii., 1884.

amount; pour this into a high narrow 100 c.c. graduated bottle and add 20 c.c. of distilled water, this being used to wash all the milk from the dish. To this add 20 c.c. of ether and tightly stopper the bottle and agitate for five minutes, then add 200 c.c. of alcohol and again agitate for five minutes and let the bottle stand until the fluid separates into two layers. Draw off the upper layer, of ether containing fat, as nearly as can be done without taking any of the lower layer; pour in 5 c.c. of ether to mix with what fat is left, and draw off. Thus 5 c.c. of ether must be poured on and drawn off five times. The ethereal solution being dried over warm, and finally boiling water, gives the amount of fat. There is now left in the bottle the sugar, casein and salts; this must be washed into a dish (best platinum) and dried over the water-bath. The residue is treated with boiling water and then allowed to stand; the casein sinks to the bottom and the sugar remains in solution. The clear solution is poured off and the residue again dried and treated with boiling water, and what is thus obtained added to that already had. This must be repeated until it is found that when boiling water is poured upon the dried sugar, complete solution takes place, no flocculi being seen in it. The casein residue is then, after being thoroughly dried, treated once or twice with boiling water to wash out any sugar that may have been left in it, care being taken that no casein is poured off. This sugar is added to that previously obtained, and the two residues are dried and incinerated, the loss in burning giving the weights of the casein and sugar respectively.

In Dr. Leeds's criticism of my method he finds fault, first, with the use of a pipette in measuring out the portions of milk to be used in analysis, saying that "the milk leaves minute particles upon its walls, and the alteration in composition thus produced is the greater, the more extensive the wetted surfaces

of the measuring vessel." This objection, although theoretically correct, is trivial, and the possible error introduced is not nearly so great as that likely to result from his own method of pouring out at a guess 5 c.c. of fluid, and thus have to weigh several times before getting sufficiently near the desired quantity to be able to proceed with the analysis. This is particularly the case where the 10 c.c. for the second portion of the analysis comes to be weighed, for it must weigh exactly twice that first used to make the analysis at all accurate. He says in speaking of the first portion of my method, by which are obtained the water, total solids, and ash—"evaporation to dryness in a water-bath to constant weight, is tedious, usually requiring three hours, and is neither so accurate nor expeditious as the method of coagulation with alcohol," and then after giving a comparison of the results obtained by trial of the two methods says—"in other words, at the expiration of seven hours, I had obtained the same constant weight as I had found by the method of coagulation at the expiration of one and one-half hours." Now he comes to this erroneous conclusion because he makes a mistake in his arithmetic with regard to the results obtained by his experimental trial. The actual fact is, that the addition of alcohol is an improvement in that portion of the analysis, although it expedites the last portion of the drying only very slightly, and does not prevent the formation of a skin upon the surface, as Dr. Leeds states. His mistake is as follows: He says, "to 5.1195 grms. milk added 3 c.c. alcohol, evaporated to dryness on water-bath * * * and then to constant weight in air-bath at 105°. Loss of weight 0.699 grm. or 13.56 per cent." This last sentence contains two mistakes, it should have been—total solids 0.699 grm. or 13.65 per cent. This mistake in the percentage of the total solids is evidently not a mere typographical error, for upon it is based

his conclusion that the addition of alcohol so very much expedites the drying. He then proceeds to take a second sample and dry it without the addition of alcohol; he drives off moisture until the total solids left, amounted at the end of seven hours to 13.5 per cent. If he had dried the first sample with which he tested his own method to the same degree as he did the latter, he would have found that it took very little less time, for it is in driving of the last portions of moisture that the process is tedious. The sample dried by his own method was not then, as the figures when corrected show, brought to constant weight, but still contained some moisture, and thus his mistaken conclusion that the addition of alcohol so much expedites the process.

With regard to the extraction of fat, Dr. Leeds says, "When water is present, ether will extract not only fat but substances soluble in water. This was probably the case in the present instance, and experiment confirmed the conjecture. After distilling off the impure ether, drying the fat to constant weight at 105° and weighing, the fat thus obtained was redissolved in absolute ether. In every trial a residue was left behind. This residue dissolved readily in water. It proved to be milk-sugar." I have often tried redissolving the fat residues in absolute ether, and never had any difficulty in causing it all to pass into solution, except in the instances I mentioned in my previous paper, when a white substance was precipitated from the ethereal solutions of fat from human milk. This substance when separated could not be redissolved in ether as I mentioned, and for the moment I thought it must be casein or sugar, but when I found that it melted and looked like any other hot grease the moment it was warmed, I concluded it must be some form of fat for whose reactions and appearance I could not account, nor can I now. The reason Dr. Leeds found milk-sugar with

the fat when extracted by my method, must have been that he was careless in pipetting off the ethereal solution of fat, and drew off also some of the water containing milk-sugar, an accident which can only be avoided by observing the greatest care in that portion of the process.

There is little that need be said with regard to the objections brought forward to my method of separating the casein and sugar. Dr. Leeds says casein (albuminoids) is "partly soluble in boiling water." If this is true, my whole method must fall to the ground, but in my paper I stated my conviction, that if casein be once thoroughly hard dried, it entirely ceases to be soluble in water, and this is very easily tested by drying some casein and then trying to redissolve it.

It now becomes necessary to speak of the method of analysis advocated by Dr. Leeds, and of his detail of the work he has done. The method he follows is the Gerber-Ritthausen's, and he says of it, "that it is the only method known at the present time which is precise and rigidly accurate."

This method is described in full in a book entitled *Chemical and Physical Analysis of Milk, Condensed Milk, Infants' Food, etc.*, by Dr. Nicholas Gerber, translated by Dr. Hermann Endemann, New York, 1882. The method, as described by Dr. Leeds, is as follows:

"*Totals Solids.*—Weigh off 5 grms. of milk in a tared covered platinum capsule. Coagulate with absolute alcohol (about 3 c.c. are used), and evaporate to dryness on water-bath. Transfer to drying-oven, and keep at 105° C. until constant weight is attained.

"*Ash.*—Ignite the residue first over a small flame, and finally at a dull-red heat. Cover the dish, cool in the desiccator and weigh.

"*Albuminoids.*—Dissolve 63.5 grms. pure sulphate of copper

in a litre of water. Prepare also a potash solution containing 50 grms. caustic potash in 1 litre. Weigh out 10 grms. of milk in a covered beaker glass, and dilute with 100 c.c. water. Add 2.5 to 3 c.c. of the copper solution. Then run in sufficient potash to neutralize exactly the excess of sulphate, which will require about 1.25 to 1.5 c.c. of the potash. The coagulated albuminoids settle immediately, leaving the liquid clear. In testing the reaction, the stirring-rod, which has been washed and withdrawn from the solution as soon as the potash has been stirred in, is dipped into the clear supernatant liquid. A drop of this liquid should turn neutral test-paper neither blue nor red. Care should be exercised not to allow the stirring-rod to bring up particles of the coagulum, since these interfere with the reaction. The clear liquid is then decanted through a filter-paper, previously dried at 110°, and weighed in a weighing flask. The precipitate is then stirred up with 100 c.c. water, allowed to settle, the supernatant liquid again decanted through the filter, and, finally, the precipitate is washed upon it. The beaker is thoroughly cleansed with a rubber washer; and all these filtrates, amounting to about 240 c.c., are finally made up to exactly 250 c.c. for the determination of milk-sugar.

"The filter-paper containing the precipitate is then opened out upon a large watch-glass, and, after drying to a certain point, is divided up into small particles by a platinum spatula, and this comminution is repeated from time to time, until finally the whole mass becomes a fine powder.

"*Fat*—The filter-paper containing the precipitate is gathered up and placed loosely in a proper funnel. The beaker-glass used for the precipitation is washed out with ether to dissolve any traces of fat adhering to it, and these ethereal washings are poured through the funnel and allowed to run into a small weighed flask, with which the funnel is connected by a ground-

glass joint. The funnel is then connected with a return-cooler, the flask carefully heated by a water-bath, and the filter paper is made to swim in the ether condensed in the funnel for about an hour, when the extraction of fat will be complete. The ether is distilled off, the flask dried at a temperature of 105°, cooled in a desiccator, and weighed. Its increment in weight gives the amount of fat.

"*Albuminoids*.—The residue in the filter is dried at 110°, and weighed in the weighing flask until constant weight is attained. It is then ignited in a platinum crucible, and the weight of ash deducted. The loss of weight is the amount of albuminoids.

"*Milk Sugar*.—This is determined in the filtrate by Fehling's solution. The figures thus obtained are identical with those found by evaporation of the filtrate to dryness, igniting, and substracting ash."

The first and most important objection to this process is that there are added to the milk to be analyzed fixed substances, which are believed to form new compounds with some of its constituents. Thus, Dr. Leeds tells us, that an albuminate of copper is formed and precipitated. In his criticism of Haidlen's method he adds a foot-note, saying: "The addition of gypsum, marble, glass, sand, etc., is unnecessary, and a source of error." Why is not the addition of potash and sulphate of copper a much greater source of error? The first mentioned substances are comparatively inert, and little disposed to form new combinations, while the latter are among the most active in the strength of their chemical affinities. No method of analysis can be accepted as conclusively accurate which depends upon the introduction of a reagent which forms a new compound which is insusceptible of being again separated into its original parts, to show how much of each is present when the

analysis is completed. How is it possible to know that the incineration of any given weight of albuminate of copper, formed from human milk, which has been dried at 100° or 105°, will inform us how much casein was originally needed to make up the compound, when it is remembered that casein itself is a substance about which we still know so little that it is not yet positively certain whether it is simple or compound?

Dr. Leeds's reagents for precipitating the albuminoids are almost exactly those used to make the Fehling's copper-test. Why, therefore, is it not likely that some of the sugar is precipitated or altered by them, as would surely happen if the fluid was heated, thereby preventing its reacting to the Fehling's solution, with which, as I understand it, Dr. Leeds made his test of the purity of his supposed casein residue. Dr. Leeds himself suggests another objection, "that, in the precipitation of the albuminoids by Ritthausen's solution, hydrated basic sulphate of copper is precipitated." But, he says, this objection does not hold good, as he has "failed to detect it in the presence of more than traces of hydrated basic sulphate." For my own part, I made the experiment of mixing the reagents, as directed, in water simply, without the presence of milk. So soon as the copper and potash solutions were brought together, a precipitation of course took place. This precipitated I collected and dried at 100°, and then exposed to the heat of a gas flame. The difference between the weight of the precipitate dried in a water-bath at 100°, until it ceased to lose weight, and after it had been exposed to the heat of a flame, was (the same bulks of the reagents being used as directed for analysis) 0.038 gramme. This makes, if the same thing occurs when the method is used for analytic purposes, the casein too great in quantity by about 0.35 per cent., which is nearly the difference between Dr. Leeds's conclusion and my own as to the

quantity of casein in human milk. Although the conditions are different, when the reagents alone are used, from those where they are used in analysis, and it cannot be argued that there must necessarily be a too high rating of the casein from this cause, yet, on the other hand, it can be by no means proved that such an error does not result; and, of the two possibilities, the latter seems much the more probable. This matter alone, even if there was no other objection to the process advocated by Dr. Leeds, is sufficient reason for declaring the method absolutely unreliable in the present state of knowledge of the subject.

I made experimental trials of the Gerber-Ritthausen's method, which Dr. Leeds declares to be the only accurate one known. The details of these trials it is hardly necessary to describe here; the result was, that the Gerber-Ritthausen's method rated the fat and milk-sugar a trifle lower, and the casein higher, than my own method did when applied to the same milk. The ash and water came out the same by both processes. With regard to the ash I found that it made no difference whether the incineration was done with an ordinary flame or with the blast, or whether in a closed or open vessel. If the burning was thoroughly done with the ordinary flame, the application afterwards of the blast did not drive off anything more; nor was there any difference in the weight of the residue, whether the vessel was open or covered. With regard to the fact that Dr. Leeds's process gave a slightly less amount of at than did my own, although the difference was so slight as to be hardly worth mentioning, it struck me that, perhaps, the potash which is used may react to a slight degree upon some of the fat, and carry it down into some new form with the casein, which is acted upon by the copper. This is only a further reason for declining to accept conclusions deduced from a pro-

cess which is open to so many sources of error, no one of which can be really proved to be inoperative.

The next matter I have to take up in connection with the work Dr. Leeds has done in milk analysis, is one which I approach with a good deal of hesitation, nor would I mention it at all in a spirit of fault-finding criticism, but only because it is necessary to have an exact appreciation of the correctness of his work, in order that a just estimate of its value may be attained. The table which he gives and which embodies the results of his analyses of eighty samples of human milk, has in it more errors than should exist when deductions are drawn intended to convince scientific men of the correctness of an estimate of the composition of human milk which, to the present time certainly, has not received anything like universal, or even general acceptance. I have carefully gone over this table and find that in seven out of his sixty-four separate analyses, the figures in the column headed "total solids by addition of constituents" are incorrect. The errors are all small except in analysis No. 32, but in it the error is quite a large one. The errors in Nos. 24, 32, 46, 50, 54, 56–59, and 75–80 (marked, "anæmic six cases"), Dr. Leeds gives at the the end of his table in parallel columns the maximum, minimum, and average of each of the different constituents. In the average column the figures given are all incorrect. It is not easy to say exactly how these averages were arrived at, for Dr. Leeds (page 243 loc. cit.) says that in estimating the "maximum difference" he omitted "Laboratory No. 1063" as being affected by some accidental error, and used sixty-two separate analyses, which would seem to leave out also the last two analyses, which are marked respectively, "robust six cases" and "anæmic six cases." My table shows in parallel columns Dr. Leeds estimate of the average and corrected figures deduced in different ways.

	Leeds's Average.	Average obtained by including all the analyses. Estimating Nos. 56-59 and 60-63 as 4 each, and the last two (Nos. 69-80) as 12. Dividing all the sums, except ash and total solids directly by evaporation, by 76, and those by 81.	Analysis No. 1063 omitted, otherwise same as previous estimate, but the sums divided by 75 and 79 respectively.	Analysis No. 1063 and the last two omitted, consequently the sums divided by 57 and 61.
I. Specific gravity	1.0313	----	----	----
II. Albuminoids	1.995	1.949	1.910	2.139
III. Sugar	6.936	6.954	6.975	7.738
IV. Fat	4.131	4.127	4.137	4.637
V. Solids not fat	9.137	----	----	----
VI. Ash	0.201	0.218	0.219	0.237
VII. Total solids (by addition of constituents)	13.268	13.253	13.245	14.750
VIII. Total Solids (directly by evaporation)	13.267	13.237	13.235	14.637
IX. Difference between VII and VIII	0.001	0.016	0.010	0.113
X. Water	86.732	----	----	----

Dr. Leeds says: "Thus, it will be seen from the accompanying table, giving the results of sixty-two separate analyses of human milk (excluding Laboratory No. 1063, as being manifestly affected by some accidental error), the maximum difference is 0.21 per cent.

"The average error, as determined by ordinary arithmetical methods, is 0.001 per cent."

A glance at the table shows how far from the actual facts this statement is; for, if the first sixty-two analyses only are considered, and No. 1063 omitted, the error, instead of being 0.001 per cent., is 0.113 per cent., or just one hundred and thirteen times greater than is stated. The errors are all, it is but just to state, small, still the existence of so very many of them must necessarily cast much doubt upon the value of the whole work, especially when it is considered how very easily

many of them could have been avoided, as, for instance, in the matter of the making up of the column "total solids, by addition of constituents," when the sum in addition is so very simple a one.

I may sum up by saying that Dr. Leeds's conclusions must not be accepted, for the following reasons:

First, because he has failed to disprove any of the propositions I put forth in my previous paper, having brought no proof to bear substantiating his assertion, that the Gerber-Ritthausen's is "the only method known at the present time which is precise and rigidly accurate."

Second, that the reasons given for estimating the casein amount low (about 1 per cent.), still hold, in the absence of disproof.

Third, that the process advocated by Dr. Leeds is necessarily unreliable, because there are added extraneous fixed substances which form new compounds with the milk, rendering it impossible to make accurate determinations of the various constituents.

Fourth, because of the numerous and considerable inaccuracies which I have pointed out in the paper.

After the reading of the preceding paper:—

Dr. ALBERT R. LEEDS, said: I shall refer briefly to some of the objections made by Dr. Meigs. The plan taken by Dr. Meigs of critizing the minutiæ of the work is an entirely just one, inasmuch as we propose to arrive at results of as great scientific accuracy as possible.

In regard to the first point that he speaks of. It is a little point to be sure, but he is certainly not correct in stating that it makes no difference whether we draw off milk for analysis with a pipette or pour directly into a dish. Milk is not a homogeneous liquid in the sense that it does not contain min-

ute particles which have the power of attaching themselves to the walls of the vessels, and the constitution of the milk after it has left the pipette is somewhat altered by the leaving behind on the walls of the pipette of some of these minute particles.

2d. In regard to the propriety of measuring a portion as compared with weighing a portion. There can be no doubt in the mind of any chemist as to which is the more correct. The only method which can lay claim to accuracy is that by direct weighing. He speaks as though it were a matter of difficulty to obtain an accurate weight. Such is not the case. When supplied with a beaker, which has its own tare or weight marked on the glass, a little experience enables one to estimate how much is to be poured in to make a definite weight of milk. The beaker is kept covered during weighing to prevent evaporation. When a measured quantity is employed, we cannot arrive at definite results until the specific gravity is ascertained. This method is so unsatisfactory that no chemist thinks of making a determination of milk analysis upon a measured quantity, but always upon a weighed sample. If, in a legal case relating to the adulteration of milk, it were discovered that the chemist had used measures instead of weight, I think that his testimony would be thrown out at once.

3d. As to the amount of time consumed in evaporation. A great many experiments have been made upon the relative thoroughness of drying by means of alcohol and drying without alcohol. The results are identical, provided one does evaporate to a constant weight. As a curious matter bearing on this point, I may say that my results upon the determination of total solids were checked off by other chemists on the State Board of Health, who used other methods of drying. This seems to be a small matter, but inasmuch as the State

law requires that in the State of New Jersey, cow's milk shall contain above 12 per cent. of total solids, the method of drying becomes of great importance. It was found that the results were practically identical, the only difference being that by the addition of alcohol a great deal of economy of time was attained.

4th. In regard to the use of ether as a solvent for the fat in the manner proposed by Dr. Meigs. I fail to see that there can be any justification whatever for its use in this way. Whenever it is necessary to extract fat from an organic body, the universal rule is, that even in a food substance like flour or meal, which contain very little moisture, previous drying of the organic substance should be resorted to before extraction of the fat with ether, because chemists regard the presence of so minute an amount of water as is to be found in food substances, as sufficient to hydrate the ether sufficiently to carry into solution other matters. This is as thoroughly verified as any point in chemistry. I look with perfect astonishment upon a method of fat extraction which proposes to add 10 c.c. of ether to milk containing already as much as 37 per cent. of water to begin with, and then add two or three volumes of water in addition. You get very little ether and an enormous amount of water, and as a result other materials are necessarily extracted. It is not for me to go into what other analyses have been performed. I only speak of the analyses which I have performed myself, and I found that the water had extracted other substances, and I should have thought it very remarkable if it had not done so.

5th. As regards the addition of foreign substances. In the early days of chemistry, at the very beginning of analytical work, it was considered that the bodies themselves should be actually separated by means of crystallization, different solubil-

ities, and so on. These methods are now largely given up as lacking in accuracy. On the contrary, the great point in analytical determination now is to obtain some compound of the body which we desire to isolate, this compound being one of very definite composition, and capable of complete separation from the other substances with which it is associated. The objection has been made to the addition of subtances like copper, and to the addition of substances like sand, glass, gypsum, and so on. The objection to the addition of these latter substances rests on an entirely different ground from that which applies to the addition of copper. When you add any of these latter substances no chemical union takes place, and the residue which is left behind after evaporation is highly hygroscopic. As direct evaporation gives all that is desired, they should not be used.

The addition of copper is resorted to for an entirely different object. It is added because it forms a most insoluble compound with the albuminoids and a compound which is capable of being manipulated, filtered, and washed with thoroughness. You may form an albuminate of zinc, of iron, or of other substances, but none of them, as has been shown by Rithausen, who has made a more extensive study of the albuminoids than any other observer, possesses the facility for manipulating and for thorough washing as the albuminate of copper.

The action of potash on casein could only happen in crude manipulations. In the manipulation of these albuminoids one obtains in the first place, in an acid solution, a precipitate of albuminate of copper; he then adds potash, not to such a point as to act on the albuminate, but to such a point as will just take up the sulphuric acid removed from the copper. It is added to the point of exact neutrality and in the presence of a strong mineral acid like sulphuric. I think that there is not

the slightest danger of the potash dissolving the casein. Unquestionably it would do so if added to excess.

Then as to the albuminate of copper itself, the experiment detailed was of entirely different description. On the addition of caustic soda to the copper solution, a precipitate of hydrate of copper would be obtained, which by boiling alone would give up its water and be converted into the oxide of copper. The experiment is not at all analogous to the changes occurring in the manipulation of albuminate of copper. When the albuminate of copper is obtained, it is washed thoroughly, dried, and then ignited, thus finding the exact weight of the mineral portion. This subtracted from the previous weight gives the weight of the organic constituents. I do not see that anything is lacking to make this mode of determining the albumenoids an accurate method. The presence of the basic sulphate of copper in the precipitated albuminate I have been unable to verify with certainty. The reduction of the copper in Fehling's test is a matter of an entirely different description. This is dependent upon the formation of a sub-oxide of copper. There is no trace of reduced copper when albuminate of copper is precipitated as proposed in the analysis of milk, and hence there can be no reduction of any substance of the nature of milk sugar.

In regard to the small errors in addition, this is a matter of entire news to me. I am much surprised to learn that such is the case, but as to the conclusions being shaken, that I cannot suppose there is the slightest ground for believing on the strength of the evidence afforded to-night. The accumulation of testimony has been wholly adverse to the conclusions obtained by Dr. Meigs. They are unsupported by any other chemists who have worked on this subject. So far as I know, he is the only one who has advocated his view as to the small

percentage of casein which he supposes to be present in woman's milk.

Dr. MEIGS: I merely wish to reply to one thing. The remarks of Dr. Leeds would seem to show that I had taken a measured instead of a weighed quantity. I always weigh the quantity. I use the measure simply to get at the neighborhood of the weight. I use the pipette just as Dr. Leeds uses the beaker glass.

BOOK REVIEWS.

A TEXT-BOOK OF PATHOLOGICAL ANATOMY AND PATHOGENESIS. *By* ERNST ZEIGLER, *Professor of Pathological Anatomy in the University of Tübingen. Translated and Edited for English Students by* DONALD MACALISTER, M. A., M. B., *Member of the Royal College of Physicians; Fellow and Medical Lecturer of St. John's College, Cambridge. Part II.—Special Pathological Anatomy. Sections I.—VIII. London:* MACMILLAN & CO. 1884.

This, the second part of Zeigler's Pathology, speaks of special pathological anatomy, divided into eight sections. Section I. is devoted to the consideration of the Blood and Lymph, the various pathological conditions to which they may be subjected is referred to in a general manner in the first chapter. The following chapters then treat in a clear and concise manner of the special pathological alterations, as changes in the chemical composition, changes in the quantity and composition of the blood. Under this head are classified plethora, amæmia, oligocythæmia and other conditions dependent upon the quantitative and qualitative changes in the blood. The other sections which refer to the vascular system, spleen and lymphatic glands, serrus membranes, skin, mucous membranes, alimentary tract, liver and pancreas, are all treated in the same systematic and classic manner.

Special mention should be made of the excellent, truly artistic manner in which the wood-cuts have been executed. They surpass anything of a similar nature found in text-books.

They assist very materially in increasing the value of the work. The book reads as if originally written in the English language. Its general appearance is very good, the paper is of good quality, and the print, with the exception of the notes, is large and distinct. The headings of chapters and paragraphs are printed in large capitals, which enables the reader to find, at a glance, any subject of special interest. B. B.

PRACTICAL PATHOLOGY. A MANUAL FOR STUDENTS AND PRACTITIONERS. *By* G. SIMS WOODHEAD, M. D., F. R. C. P. E., *Demonstrator of Pathology in the University of Edinburgh; Pathologist to the Royal Hospital for Sick Children; late President of the Royal Medical Society, etc., etc. With One Hundred and Thirty-six Colored Plates. Philadelphia:* HENRY C. LEA'S SON & CO. *1884.*

The author of this work has fully realized the deficient manner in which pathology is taught in our schools, the scant opportunity offered students to acquaint themselves with the macroscopic and especially microscopic appearance of healthy and diseased tissues. A thorough understanding of pathological processes can only be obtained by the formulation in the mind of a distinct picture of the changed appearance of the tissues. He who has never viewed through a microscope, or seen a graphic description of a cirrhotic liver, can as little obtain a clear and intelligent conception of such a process as he could of the construction of a chronometer from a verbal description. The author has attempted to substitute for the lack of practical instruction a number of illustrations depicting the most typical changes found in various pathological conditions.

The book also serves as a guide to laboratory work. The

first few chapters, devoted to post mortem examinations and microscopic technology, are tolerably complete and practical. All known staining methods, including the quite recent formulæ for bacteria staining, are mentioned.

The remainder of the book deals with the most common pathological changes of the various tissues of the body. The work is modeled after the plan of Frey's.

We can recommend the work for its clearness of style, brevity and completeness. B. B.

AN INTRODUCTION TO PATHOLOGY AND MORBID ANATOMY. *By* J. HENRY GREEN, M. D., *Fellow of the Royal College of Physicians, London, etc., etc. The fifth American, from the sixth revised and enlarged English edition, with one hundred and fifty engravings. Philadelphia:* HENRY C. LEA'S SON & CO. 1884.

Henry Green's text book on Pathology is well known to the English-speaking medical public. It has always been the object of the author to represent the present state of our knowledge. To meet this demand, several chapters have been added by Mr. Stanley Boyd, which improve the value of the book. The chapter on "Karyokimsis," forms a fitting introduction to the volume, founded on the dictum of Virchow—*Omnis cellula e cellula.* The chapter on vegetable parasites contains a general *résumé* of the Germ Theory, started by Astur, Schwann and Cagnaird de Latour, and advanced by Pasteur's researches. The physical theory originated by Willis and upheld by Liebig, is discussed in its various bearings. The author concludes that all the processes generally known as fermentation and putrefaction are due to the action of vegetable organisms. The natural history of the vegetable parasites, also the researches of Koch, Klebs, Pasteur, Cohen, Nieser and others, are briefly

mentioned, thus giving the student, in brief, the results of years of scientific labor, accounts of which are scattered throughout our literature. The fact that the work has passed through a fifth edition, may be taken as evidence of its excellency and of its appreciation by the medical world. B. B.

A MANUAL OF ORGANIC MATERIA MEDICA. *By* JOHN M. MAISCH. *Philadelphia:* LEA BROS. & CO. *Chicago:* JANSEN, MCCLURG & CO.

That portion of Materia Medica relating to inorganic substances need necessarily differ so little from the subject of inorganic chemistry, that the student is usually able to grasp it without much difficulty. Here a scientific classification is possible, and the substances having, in general, a fixed and known composition, both teacher and student feel that they are walking on well-defined ground. As much cannot be said of the organic bodies used in medicine. In most cases it is not even possible to refer them to any one of the more or less complex groups now recognized in organic chemistry, as their composition is often quite variable, not always admitting of easy determination. This fact increases very greatly the difficulty which the student must encounter in a study of the subject. A strictly scientific classification being out of the question, writers follow various arbitrary plans. Some have arranged substances in an alphabetical order; others arrange them according to the purposes for which they are used in medicine; but this method, while it possesses advantages for the student, must be characterized as very unscientific, and, at best, only provisional, as it throws bodies together which have merely this in common: that as remedies, they have certain

resemblances. The therapeutics of another generation might suggest an entirely different classification.

The work before us, which appears now in its second edition, and is intended for pharmacists rather than for physicians, follows another system. Organic drugs are divided into three groups, viz., those of animal origin, those of vegetable origin having cellular structure, and those of vegetable origin without cellular structure. Of the animal drugs, six sub-groups are made; of the cellular vegetable, twelve, depending chiefly on botanical features, and of the vegetable drugs without cell structures, six, depending chiefly on chemical properties.

Under each heading the important physical and chemical characteristics are given, and usually fully enough for identification. Many of the articles are furnished with illustrations, adding greatly to the practical value of the work. Its size, about 500 pages, is such that it can be used as a class book in connection with a course of lectures, and for this purpose it is undoubtedly the best manual we have. J. H. L.

DISEASES OF THE NOSE. *By* CLINTON WAGNER, M. D., *Professor of the Diseases of the Nose and Throat in the New York Post-Graduate School, etc., etc. With Illustrations of Instruments and Pathological Conditions. Octavo, pp. 252, New York;* BIRMINGHAM & COMPANY.

Rhinoscopy has now attained the age of a quarter of a century. Its discovery opened up fresh territory in the domain of medicine, some of the fruits of which are exemplified in the many manuals and treatises upon diseases of the nose, which have appeared during the past decade, while the ready sale enjoyed by most of these books, is evidence as well of their merit as of the wide-spread interest in the subject. The present work by Professor Wagner, is deduced from an

extensive experience and well deserves our favorable consideration.

The preliminary chapter upon the anatomy of the Nasal Fossae is illustrated by fair wood-cuts, which save much time and endless annoyance in reference, and the authors of some treatises of greater pretentions might well "take the hint" in the preparation of their future editions.

On page 21, occurs the statement: "This so-called superior turbinated bone protrudes so slightly into the nasal fossa, that it cannot be seen on the living subject, either through the anterior or posterior nares," language certainly inconsistent with a cut upon page 49, of the rhinoscopic image of the posterior nares, in which the superior turbinated bone is figured. This body is frequently perceptible in the rhinoscopic mirror, although it is not always visible.

In view of the frequent assertions, by those unaccomplished in the art, of the impracticability of posterior rhinoscopic examination, it is interesting to learn that the author succeeded, thoroughly, in so examining ninety-six *per cent.* of a continuous run of hospital cases.

Fresh-air maniacs, those who insist upon sleeping during the inclement months, with widely opened windows, should note, that this practice is regarded as a "not unfrequent" exciting cause of chronic nasal catarrh, and we would further add that to our certain knowledge it is a most prolific source, also, of *acute* laryngeal, pharyngeal and nasal inflammations. It is certainly unreasonable to pass the day in, perhaps, superheated apartments and the night, when animal vitality is at lowest ebb, in an atmosphere cold and damp, and in our climate, often of a temperature below zero.

In the treatment of nasal stenoses from deflection of the septum, enchondroma, or osteoma, Professor Wagner advo-

cates the removal of the obstructing parts by rapidly revolving knives and burrs driven by the dental engine. No anæsthetic is requisite as the very rapid revolutions of the burr cause comparatively little pain. The results in the cases which he reports are exceedingly satisfactory,

The danger to life from the removal of naso-pharyngeal fibroma, by the galvano-cautery ecraseur, is stated to be "absolutely none," which recalls to our mind a case witnessed, a few years since, at the *Allgemeines Krankenhaus* in Vienna. A robust young man with a naso-pharnygeal fibroma the size of a walnut; removal *ad secundum artem* with the galvano-cautery écraseur, by Professor Schötter; death within one week from pyæmia; autopsy: suppurative pericarditis and metastatic abscesses. Such a deplorable termination is, however, the rarest of occurrences. The phraseology of the book is clear and concise, the paper and print are very good, and typographical errors are few in number.

W. E. CASSELBERRY.

A HAND-BOOK OF PATHOLOGICAL ANATOMY AND HISTOLOGY. *By* FRANCIS DELAFIELD, M. D., AND T. MITCHELL PRODDEN, M. D. WM. WOOD & CO., *New York. pp. xvi.—575.*

This is the second volume of Dr. Delafield's "Hand-Book of Post Mortem Examinations and Morbid Anatomy," and is issued in conjunction with Dr. Prodden.

The work comprises four parts:—

1st. The method of making post mortem examinations, and of preserving diseased tissues and preparing them for microscopical study.

2d. Morbid changes in the circulation of the blood.—Changes in the composition of the blood.—Degenerative changes in the

tissues.—Animal parasites.—Bacteria, their relation to disease and the method of preparing and examining them.—Inflammatory and allied changes in tissues.—A classification and description of tumors.

3d. The macroscopic and microscopic morbid anatomy of organs.

4th. Lesions found in the general diseases, in poisoning and in violent deaths.

The subject matter is systematically arranged and clearly treated, and aside from valuable additions, the book has been improved by revision.

The illustrations greatly enhance the usefulness of the work, and are of the first order of excellence.

The book will be found valuable as a Hand-Book of Diagnosis in Pathological Anatomy.

F. S. J.

INTESTINAL OBSTRUCTION: ITS VARIETIES, WITH THEIR PATHOLOGY, DIAGNOSIS AND TREATMENT. *The Jacksonian Prize Essay of the Royal College of Surgeons of England. 1883. By* FREDERICK TREVES, F. R. C. S. *60 Illustrations.* HENRY C. LEA'S SON & CO., *Philadelphia;* JANSEN, MCCLURG & CO., *Chicago. 120 pp. x.—515.*

The limited space usually assigned to the subject of intestinal obstruction in our systematic works of reference, makes the appearance of this little book especially acceptable to all who appreciate thorough investigation and are willing to forego, in a large measure, theoretical considerations.

The different varieties of intestinal obstruction are classified upon a pathological basis, and are considered under the following heads:

Strangulation by bands, etc., or through apertures.

Volvulus.

Intussusception.

Stricture.

Obstruction by neoplasms.

Compression by tumor, etc., external to the bowel.

Obstruction by gall-stones and foreign bodies.

" " enteroliths.

" " fæcal masses.

The pathology, symptomatology, cause, and prognosis of each is treated in turn.

In the latter chapters on diagnosis the subject is considered from the clinical standpoint under the headings:—

1. The general significance of the leading symptoms.

2. The diagnosis of the different forms of intestinal obstruction.

3. The symptoms as modified by the position of the obstruction.

4. The various affections that have been most frequently confused with cases of obstruction of the bowels.

Lastly: three chapters on treatment, discussing non-operative and operative measures.

Throughout the work, there is constant reference made to illustrative cases either observed by the author or recorded by others; and to the pathological specimens preserved in museums.

Interesting facts and cases, published since the completion of the essay, have been incorporated in the work.

The book appears in the convenient form of the clinical manuals issued by the publishers. F. S. J.

STUDENT'S MANUAL OF HISTOLOGY. *For use of Students, Practitioners and Microscopists. 3rd Edition. Entirely re-written, greatly enlarged and newly illustrated. 78 Engravings. By* CHARLES H. STOWELL, M D., F. R. M. S. *University of Michigan, Ann Arbor, Michigan. Published by the Author. 8vo. pp. 368.*

The introductory chapters—I. and II.—briefly describe the microscope, its principal accessories, and their uses, and such re-agents and methods of preparing animal tissues as the author has found most useful.

The chapters on the microscopic anatomy consist of short descriptions of the tissues and organs of the body. An effort is also made to lay before the reader briefly the results of recent investigations. Closing each chapter is given a section indicating the special methods best adapted to the study of the tissue described.

The last two chapters are devoted respectively to short descriptions of tumors and of the various starches met with as adulterants of commercial articles.

The work will perhaps be found more useful as a manual for the laboratory than as a text-book for the class-room.

We hope that if another edition should be issued, the author will take the opportunity to adopt a more logical and scientific arrangement of subjects, and will omit extraneous matter; in a word, that he will make the book what it should be,—a concise manual of normal histology. F. S. J.

BOOKS RECEIVED.

Modern Therapeutics of the Diseases of Children, by Joseph F. Edwards, M. D. Philadelphia: D. G. Brinton.

Minor Surgical Gynecology, by Paul F. Mundé, M. D. New York: William Wood & Co. Chicago: W. T. Keener.

A Practical Treatise on Nasal Catarrh and Allied Diseases, by Beverly Robinson, A. M., M. D. (Paris). Second Edition. New York: William Wood & Co. Chicago: W. T. Keener.

Handbook of Diseases of the Skin, edited by H. von Ziemssen. New York: William Wood & Co. Chicago: W. T. Keener.

The Oleates: An Investigation into Their Nature and Action, by John V. Shoemaker, A. M., M. D. Philadelphia: H. A. Davis, Attorney.

Injuries of the Spine and Spinal Cord, without Apparent Mechanical Lesion and Nervous Shock, in their Surgical and Medico-Legal Aspects, by Herbert W. Page, M. A., M. C. (Cantab.) Second Edition. Philadelphia: P. Blakiston, Son & Co.

Transactions of the New York State Medical Association, for the year 1884. Vol. I.

The Curability and Treatment of Pulmonary Phthisis, by S. Joccond. Translated by Montague Lubbock. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

Handbook of Physiology, by W. Morrant Baker, F. R. C. S., and Vincent Dormer Harris, M. D. Vol. II. New York: William Wood & Co. Chicago: W. T. Keener.

Clinical Studies on Diseases of the Eye, by Dr. Ferdinand Ritter von Arlt. Translated by Lyman Ware, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

PAMPHLETS RECEIVED.

Medizinische Jahrbücher herausgegeben von der K. K. Geselschaft der Aerzte Redigirt von Professor E. Albert, Professor H. Kundrat und Professor E. Ludwig. Jahrgang, 1884, IV Heft.

Disinfection and Disinfectants. Preliminary Report made by the Committee on Disinfectants of the American Public Health Association.

Dr. Seguins' Metric Prescription Book. G. P. Putnam's Sons.

Insanity and Divorce. The Neuropathic Condition and Treatment of Cancer. Mysomania, by C. H. Hughes, M. D. Abstracted Editorials from the *Alienist and Neurologist*.

A Case of Psycho-Sensory (affective or moral) Insanity, by C. H. Hughes, M. D. Reprint, *Alienist and Neurologist*.

A Lecture on Sterility, by William H. Walthen, M. D.

LOCAL NEWS.

The Fifteenth Annual Commencement Exercises of the Woman's Medical College were held in the Grand Opera House, April 21st.

Degrees were conferred on twenty-two young women by the President, Professor W. H. Byford, M. D., accompanied by an appropriate address.

The Secretary, Professor Marie J. Mergler, distributed the prizes as follows:

The Rosa Engert Prize, for best examination in Medical Microscopy, to Anna Dennis Gloss and Nettie Derexa Morey.

The prize offered by The Woman's Christian Union for the best paper on the Physiological Action of Alcohol, and its Therapeutic Use, to Anne C. Burnet.

The address to the graduating class was delivered by Miss Ada C. Sweet, of Chicago. The subject was "The Age of Humanity."

The Alumnae Association of the College held its annual meeting after the exercises and elected officers and transacted the usual business.

In the evening, a reception was given to the faculty, former teachers, alumnae and graduating class, by Professor and Mrs. Charles Warrington Earle, at their residence.

The members of the executive committee of Presbyterian Hospital have decided to enlarge this new hospital, by building a five-story brick building adjoining the north side of it. It is expected that work on the new building will be begun at once.